

# Economic Impact of the Eagle Ford Shale

## March 2013 Update

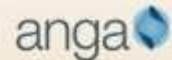
Thomas Tunstall, Ph.D.  
Research Director  
Institute for Economic Development  
The University of Texas at San Antonio  
[thomas.tunstall@utsa.edu](mailto:thomas.tunstall@utsa.edu)

# University of Texas at San Antonio Institute for Economic Development

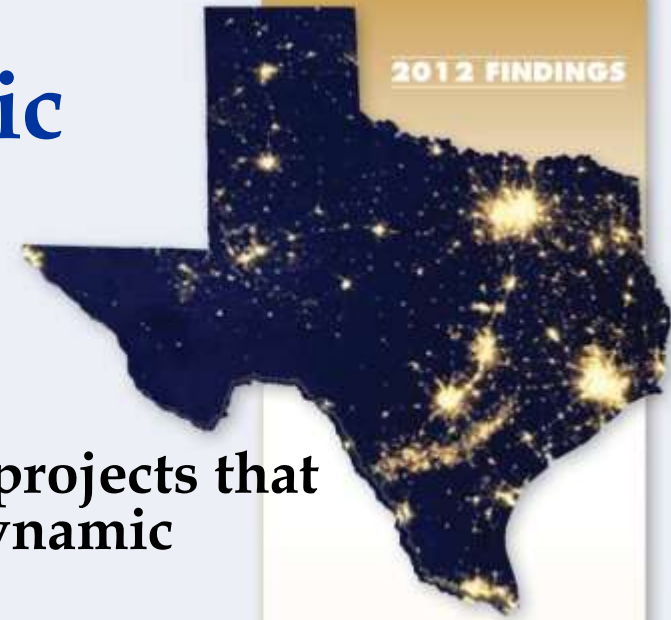
- Eagle Ford Shale Community Development Program (14 Counties in South Texas)
- Small Business Development Centers - SBDC (79 Counties in South Texas)
- Rural Business Program (79 Counties in South Texas)
- Startech (Texas)
- Contracting Resource Center (Texas)
- Veteran's Assistance Center (Texas)
- Southwest Trade Adjustment Assistance Center (TX, OK, LA)
- SBDC National Information Clearinghouse (National)
- Minority Business Center (National)
- **Community and Business Research (National, Int'l)**
- International Trade Center (Mexico, Central/South America, Caribbean, North Africa)



2012 FINDINGS

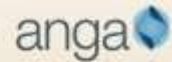


# UTSA Institute for Economic Development



Research at the Institute focuses on research projects that help business and policymakers plan for a dynamic future:

- Economic Impact Studies
- Community Development Studies (I-35, SH 130)
- EB-5 Immigrant Investor Regional Center Impact Studies
- Analysis on Various Topics:
  - Eagle Ford Shale
  - San Antonio Missions
  - South Texas Medical Center
  - University of Texas System
  - Targeted Industry Recruitment / Workforce Analysis
  - Repurposing of Military Bases for Commercial Use



# UTSA Institute for Economic Development

As the Research Arm of UTSA's Institute for Economic Development we are dedicated to serving:

- Economic development corporations (e.g., SA EDF)
- City, state and federal governments
- Workforce development boards
- Businesses
- Associations
- Other community stakeholders





**In theory,  
there is no  
difference  
between theory  
and practice;  
in practice,  
there is.**

**- Yogi Berra**



2012 FINDINGS



Institute for **Economic** Development  
The University of Texas at San Antonio

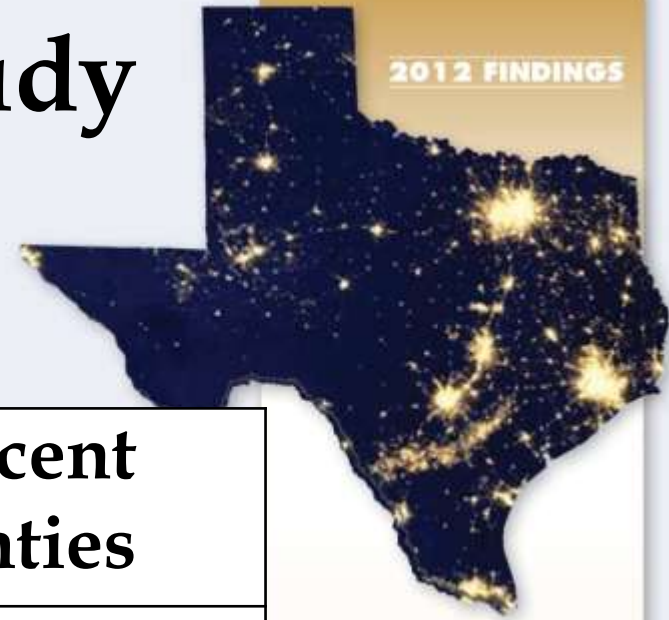
**UTSA**







# Counties Included in Study Area

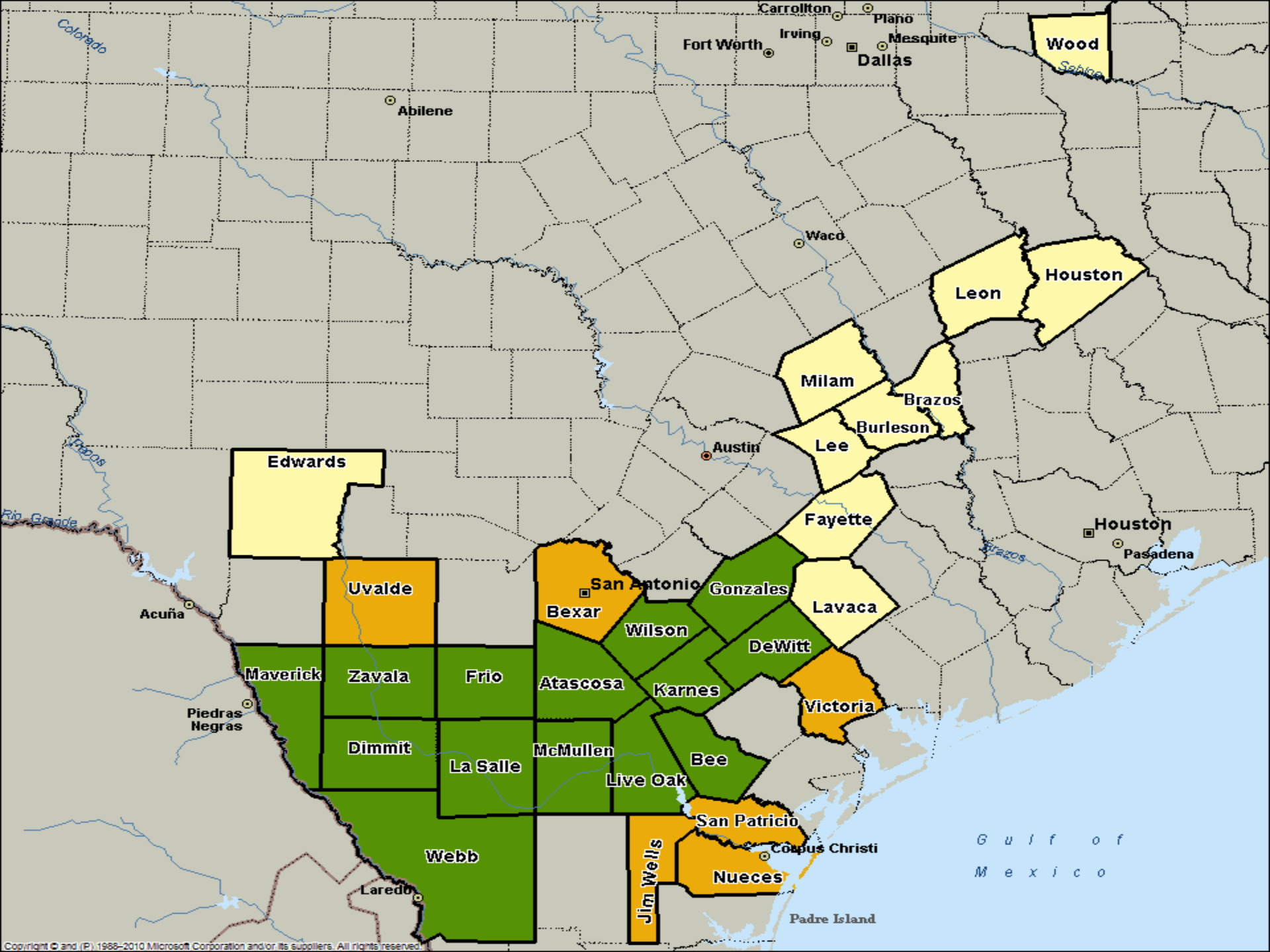


Primary Counties		Adjacent Counties
Atascosa	La Salle	Bexar
Bee	Live Oak	Jim Wells
DeWitt	Maverick	Nueces
Dimmit	McMullen	San Patricio
Frio	Webb	Uvalde
Gonzales	Wilson	Victoria
Karnes	Zavala	



Counties not included in the analysis are  
Leon, Milam, Brazos, Burleson, Lee, Fayette, Lavaca, Edwards, Houston, and Wood





# UTSA Eagle Ford Shale Reports

- Preliminary Economic Impact (Feb 2011)
- Economic Impact Baseline Report (May 2012)
- Workforce Analysis (October 2012)
- Updated Economic Impact - March 26, 2013 Release at the State Capitol

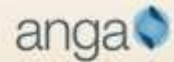


# Reasons for Significant Increases in Economic Impact from 2011 to 2012

- \$19B spent on capital expenditures in 2012 (Perhaps \$28B by 2013)
  - Operational support facilities came online in 2012
  - Pipeline construction across the 14-county area and beyond has ramped up in earnest
  - New manufacturing, refining and processing facilities in Eagle Ford and along the Gulf Coast under construction
  - New and upgrade rail infrastructure projects underway

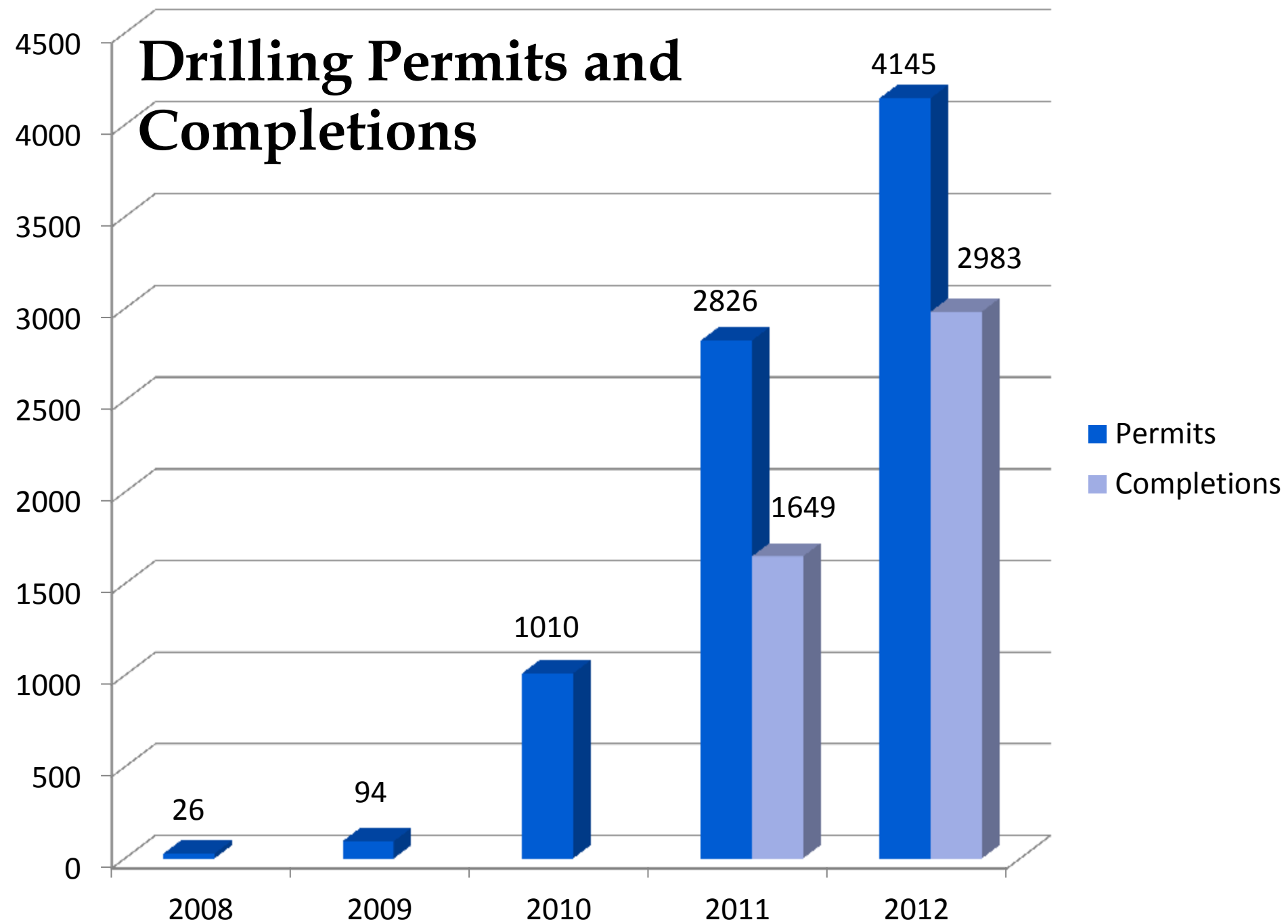


2012 FINDINGS

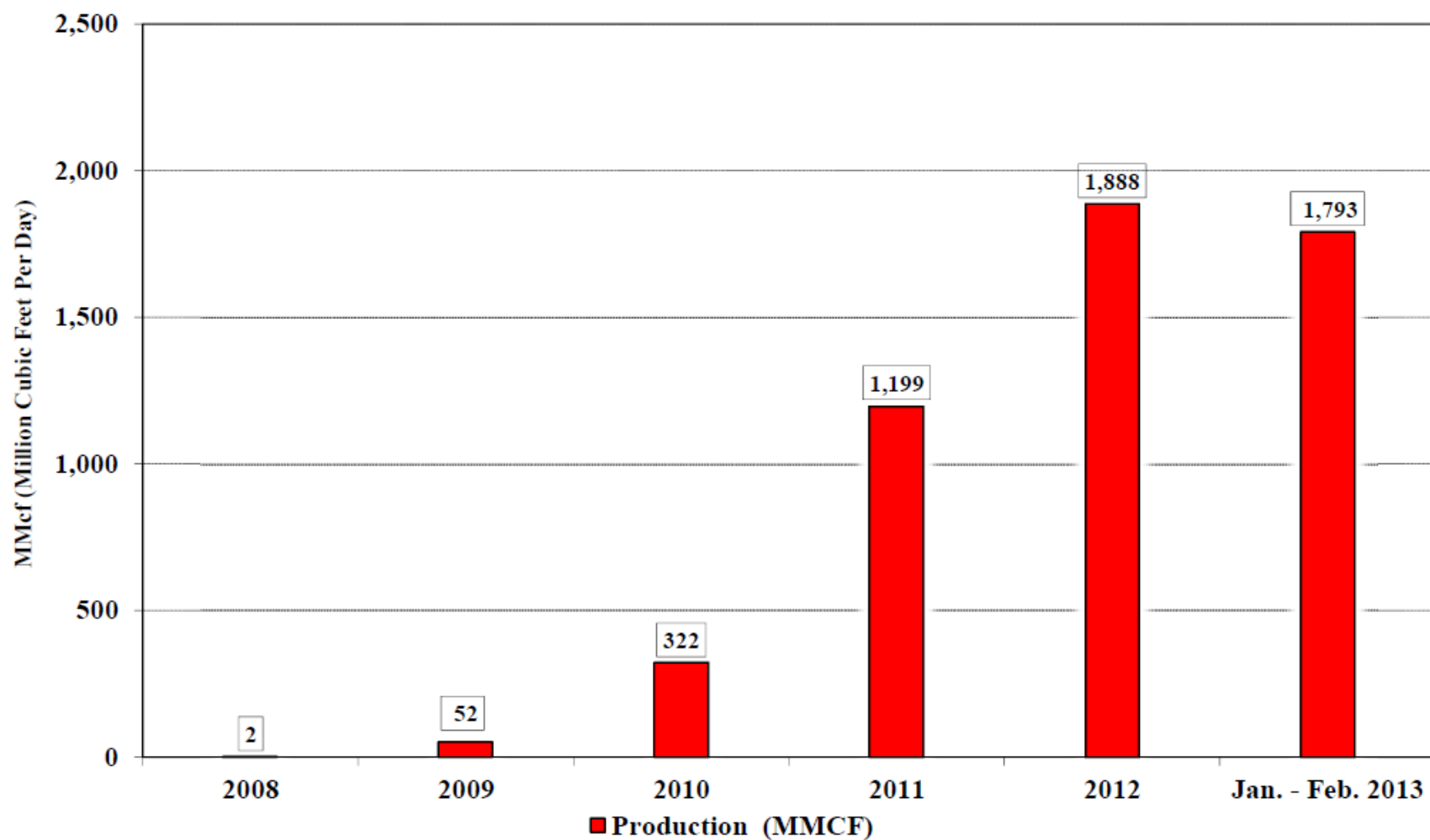




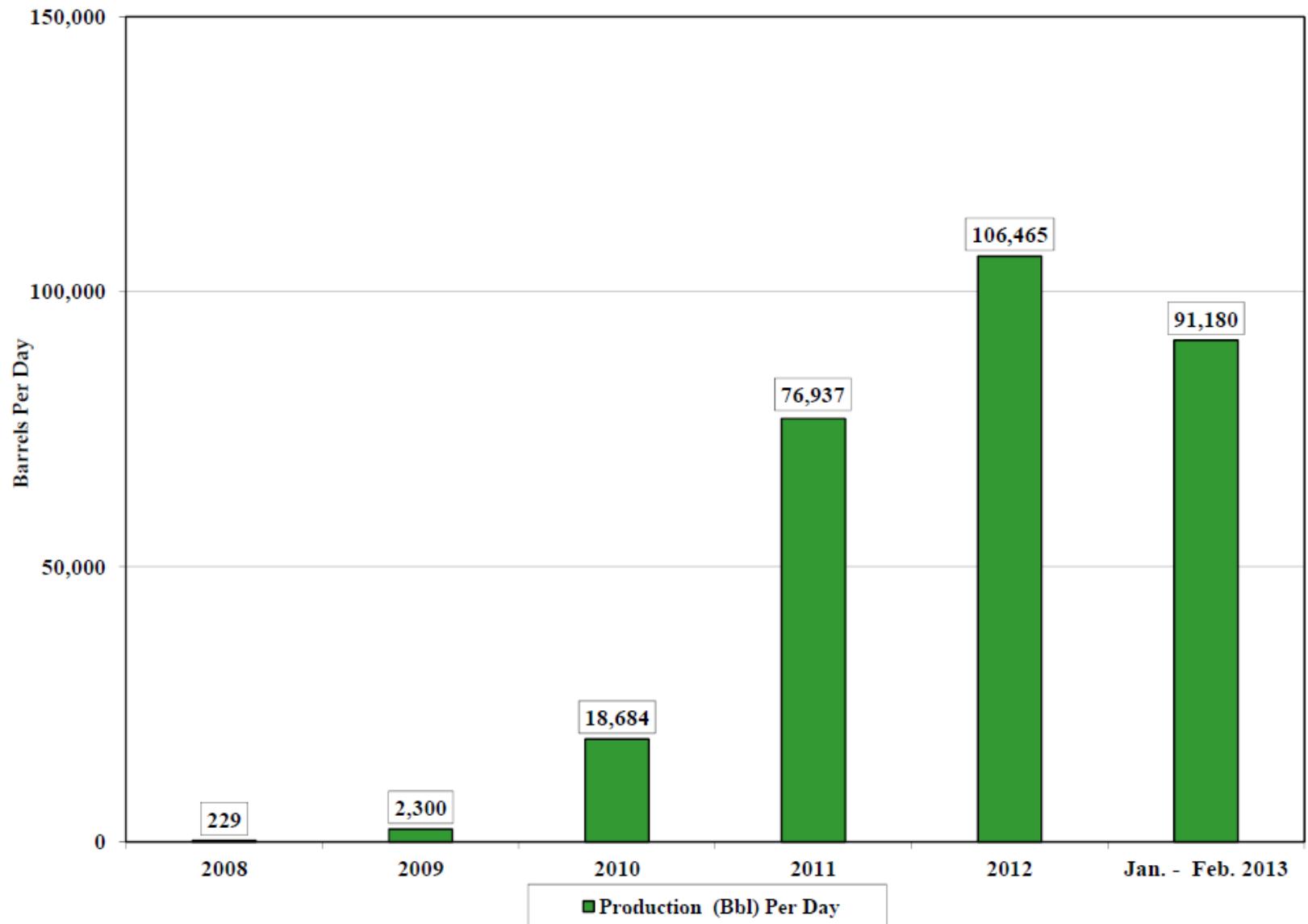
# Drilling Permits and Completions



**Texas Eagle Ford Shale  
Total Natural Gas Production  
(MMCF)  
2008 through February 2013**

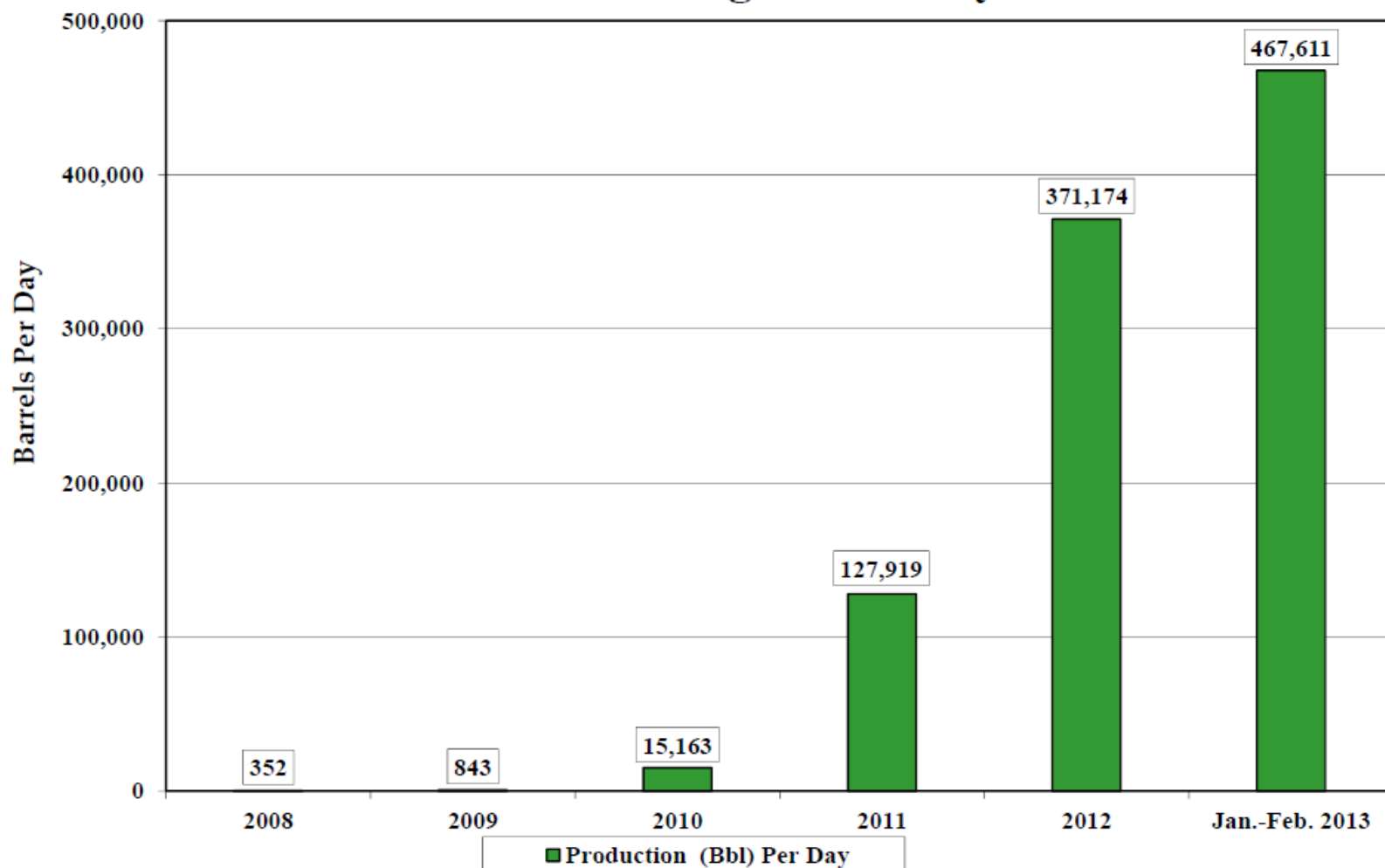


# Texas Eagle Ford Shale Condensate Production 2008 through February 2013





# Texas Eagle Ford Shale Oil Production 2008 through February 2013



04/22/2013

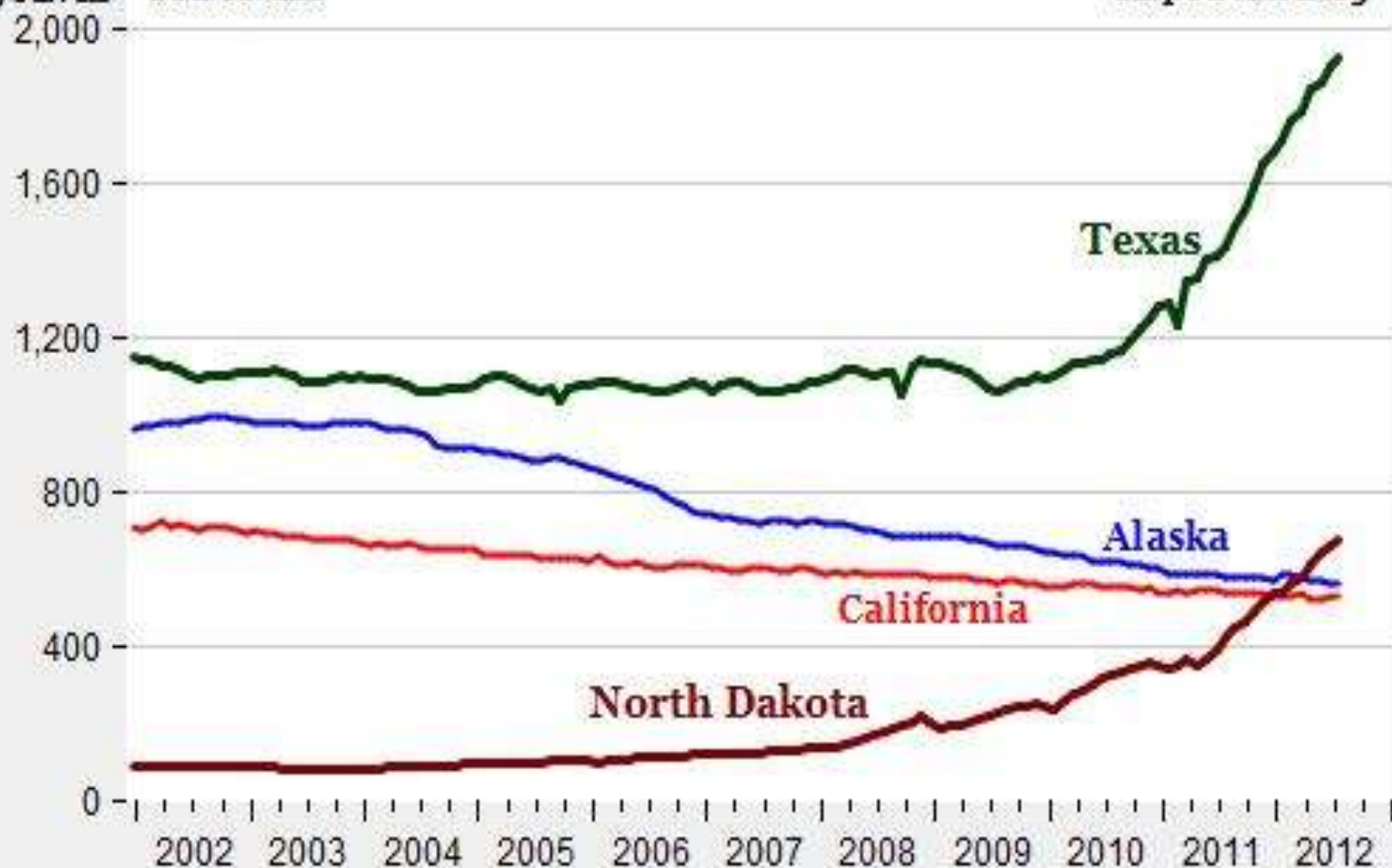
Source: Railroad Commission of Texas Production Data Query System (PDQ)

# Daily Oil Production in the Top 4 U.S. Oil-Producing States, 2002-2012

Thousands  
of barrels

Source: EIA

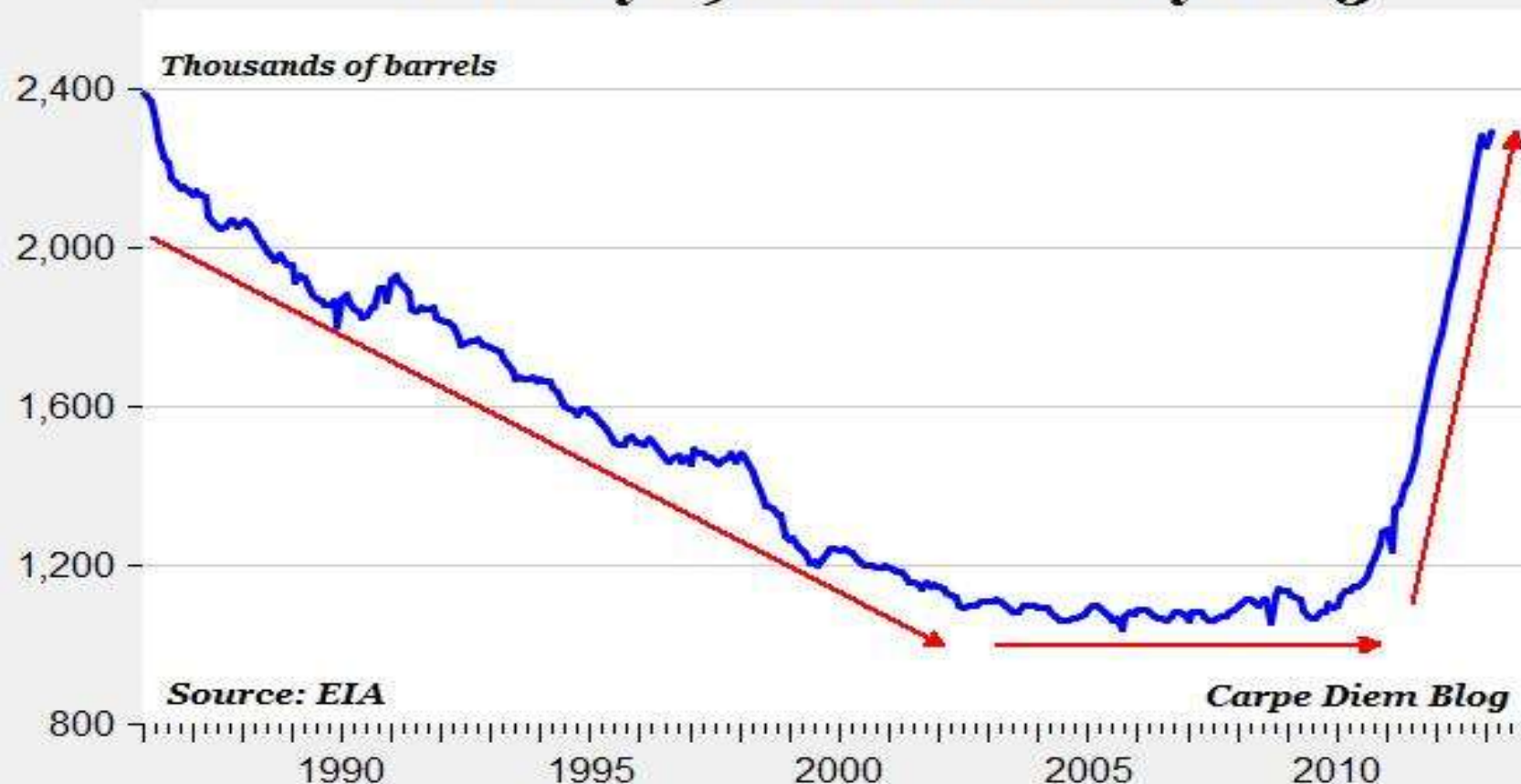
Carpe Diem Blog



# Texas Oil Production Surpassed 1988 Levels in September 2012

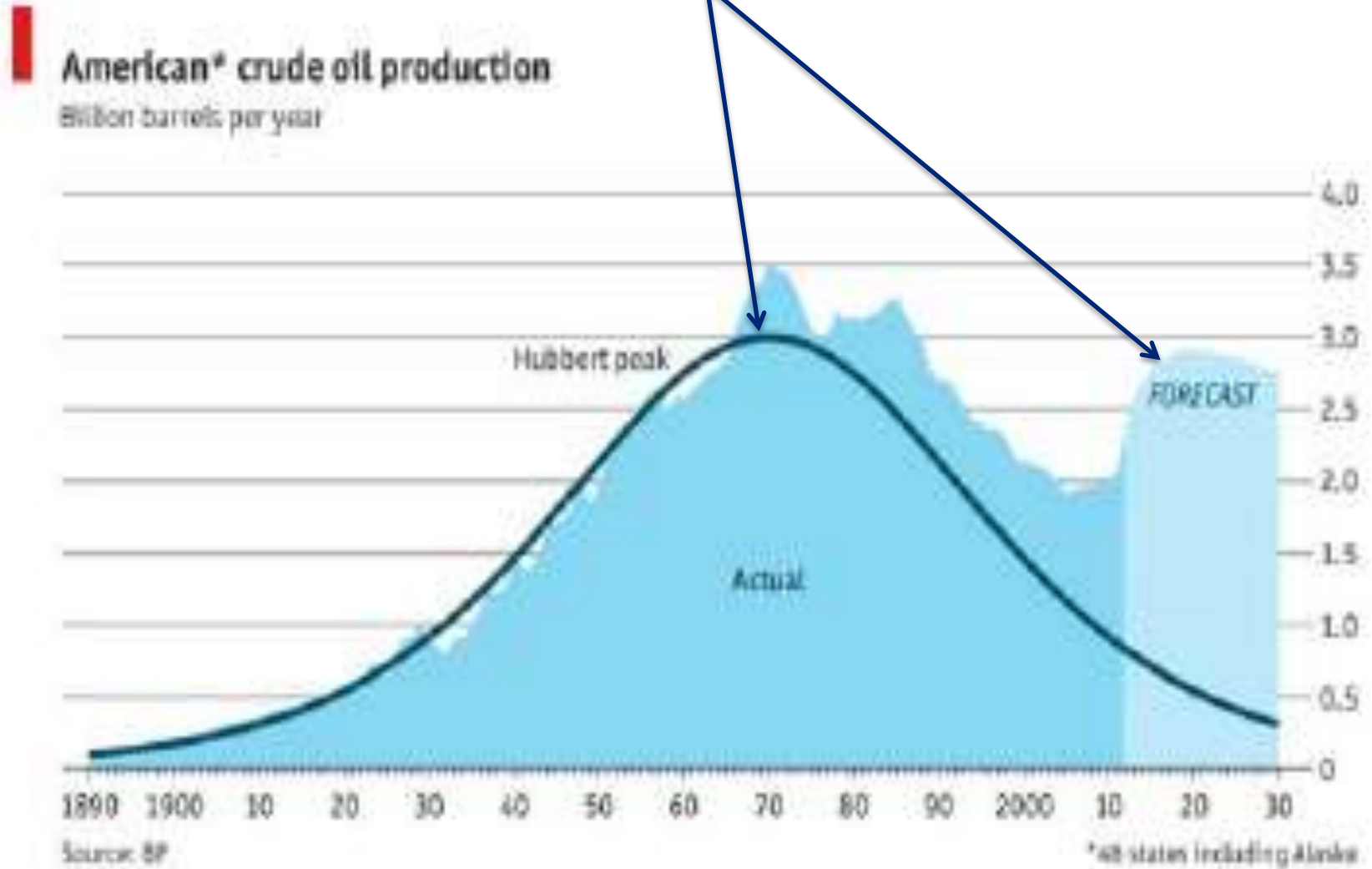


## Texas: Daily Oil Production January 1986 to February 2013



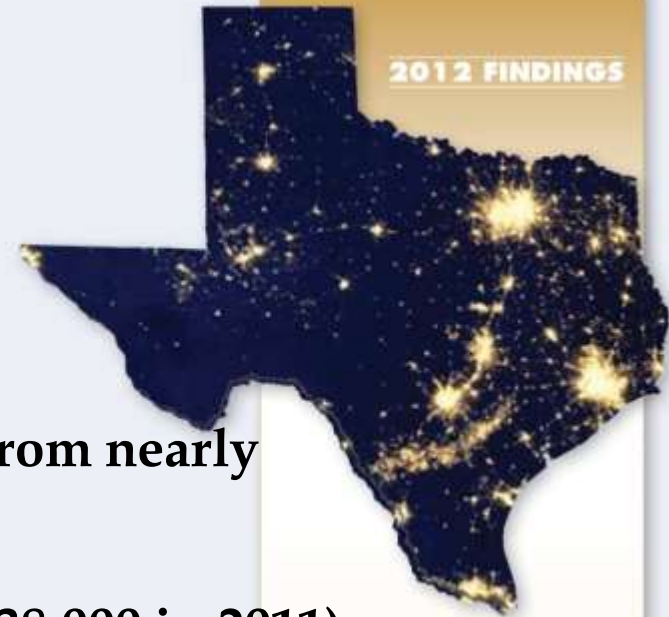


# Peak Oil?

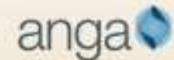


# Total Economic Output Impact in 2012 14-County Study Region

- Over \$46 billion in total economic output (up from nearly \$20 billion in 2011)
- Over 86,000 full-time jobs supported (up from 38,000 in 2011)
- \$3.25 billion in salaries and benefits paid to workers (up from \$2.6 billion in 2011)
- Over \$22.8 billion in gross regional product (up from \$10.9 billion in 2011)
- More than \$1 billion in state revenues (up from \$312 million in 2011)
- More than \$828 million in local government revenues (up from \$211 million in 2011)



2012 FINDINGS

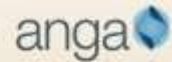


# Moderate Scenario Estimated Combined Impacts for 2022 (14-County Area)

- More than \$61 billion in total economic output
- Nearly 90,000 full-time jobs supported in the area
- Approximately \$4.6 billion in salaries and benefits
- More than \$32 billion in gross regional product
- More than \$1.9 billion in state revenues
- Estimated local government revenues of over \$1.8 billion



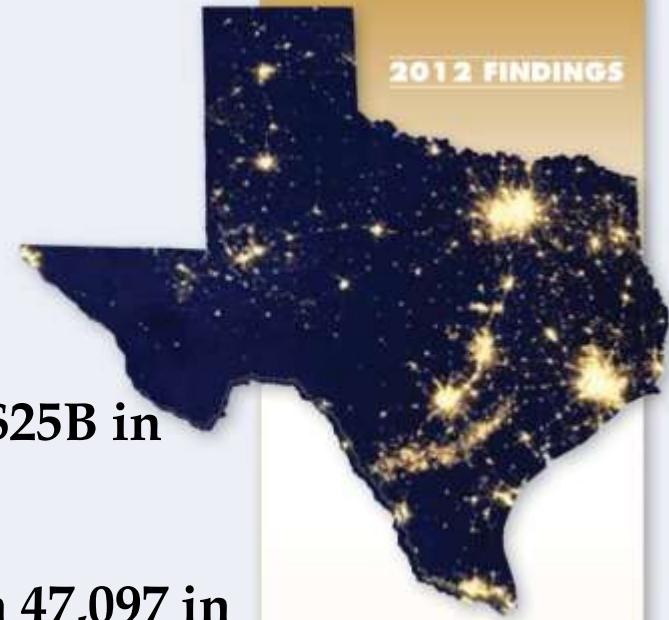
2012 FINDINGS





# Total Economic Output Impact in 2012 20-County Study Region

- Over \$61 billion in economic output (up from \$25B in 2011)
- Over 116,000 full-time jobs supported (up from 47,097 in 2011)
- Nearly \$4.7 billion in salaries and benefits paid to workers (up from \$3.1B in 2011)
- Over \$28 billion in gross regional product (up from \$12.63B in 2011)
- Over \$1.2 billion in state revenues (up from \$358 million in 2011)
- Over \$1 billion in local government revenues (up from \$257 million in 2011)



2012 FINDINGS

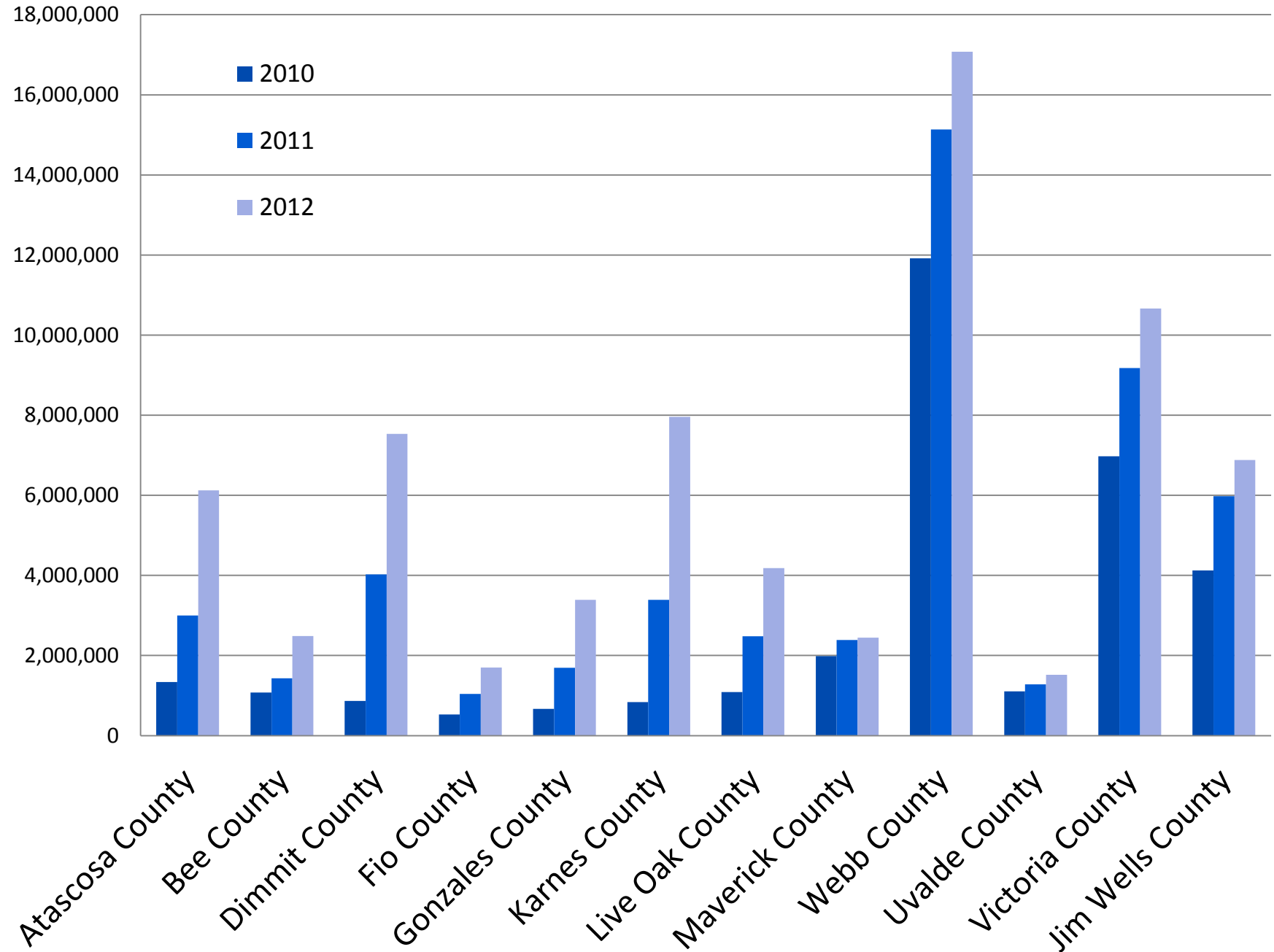


# Moderate Scenario Estimated Combined Impacts for 2022 (20-County Area)

- More than \$89 billion in total economic output
- 127,919 full-time jobs supported
- \$6.5 billion in salaries and benefits paid
- \$42.0 billion in gross regional product
- \$2.2 billion in state revenues
- \$2.1 billion in local government revenues



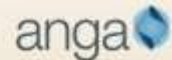
# County Sales Taxes Receipts



# Proposed Legislation Under Consideration This Session



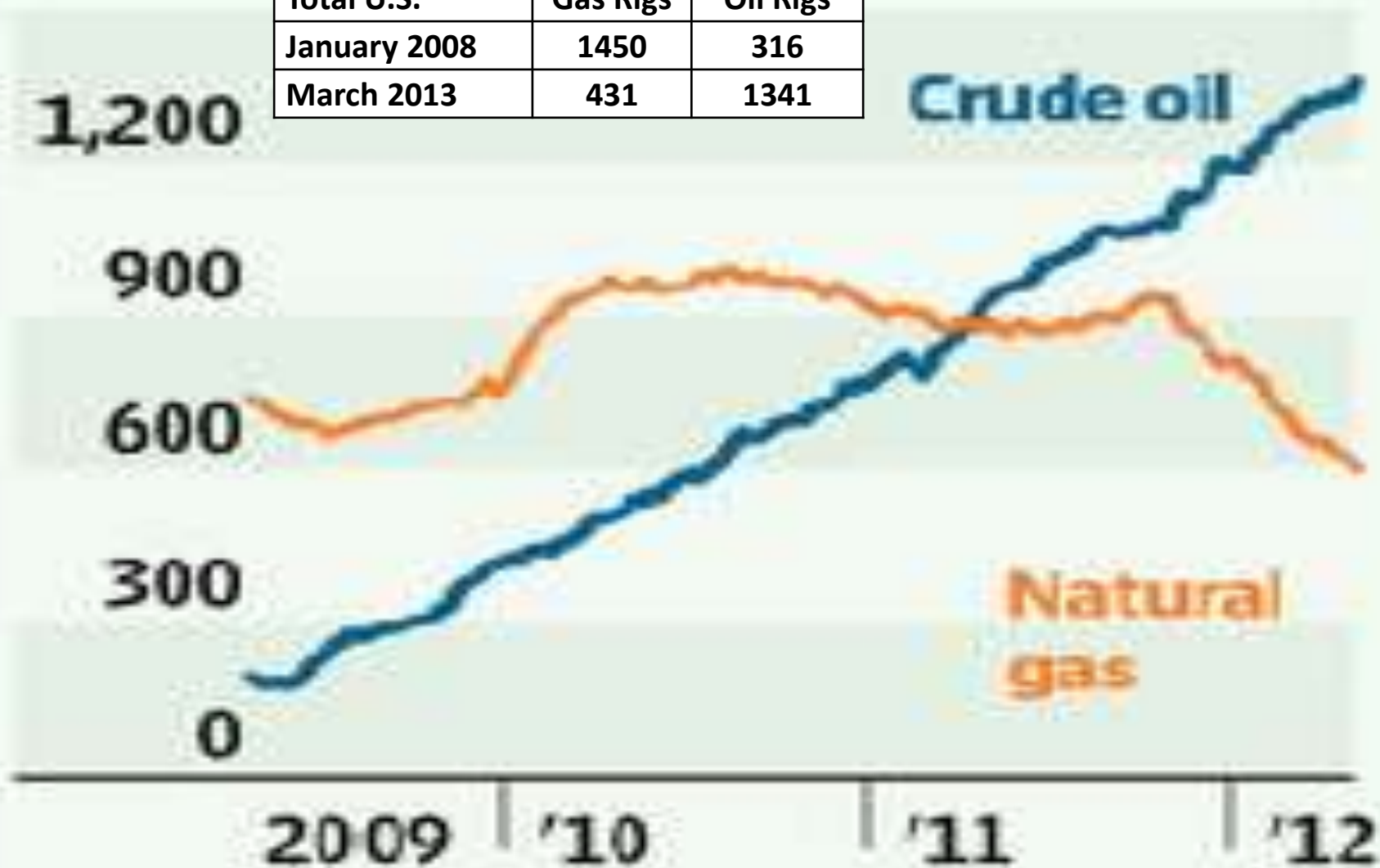
- **HJR 63 - Revenue Impact: \$600,000,000**
  - Dededicating a portion of the state's severance tax revenue to road construction and improvements in counties in which a shale location is located
- **HB 782 - Revenue Impact: \$3,200,000,000**
  - Allocating a portion of the motor vehicle sales tax revenue to TXDOT and determining the uses of that revenue
- **HB 479 - Revenue Impact: \$2,000,000**
  - Allocating a portion of the revenue from taxes imposed in the sale, rental and use of motor vehicles to TXDOT
- **SB 300 - Revenue Impact: \$358,000,000**
  - Using revenue from the EFS to fund county road and bridge projects
- **SJR 39 - Revenue Impact: \$1,500,000,000**
  - Creating a new capacity fund for the development of transportation projects; dedicating a portion of the state revenue to that fund; providing for initial and recurring funding through registration fees
- **HJR 107 - Revenue Impact: \$1,100,000,000**
  - Imposing an additional motor registration fee to be deposited into the Texas Mobility Fund
- **HJR 108 - Revenue Impact: \$1,400,000,000**
  - Limiting the diversion of revenue from motor vehicle registration fee, taxes on motor fuels, lubricants, motor vehicle tires and parts and, certain revenues received from the federal government toward school funds





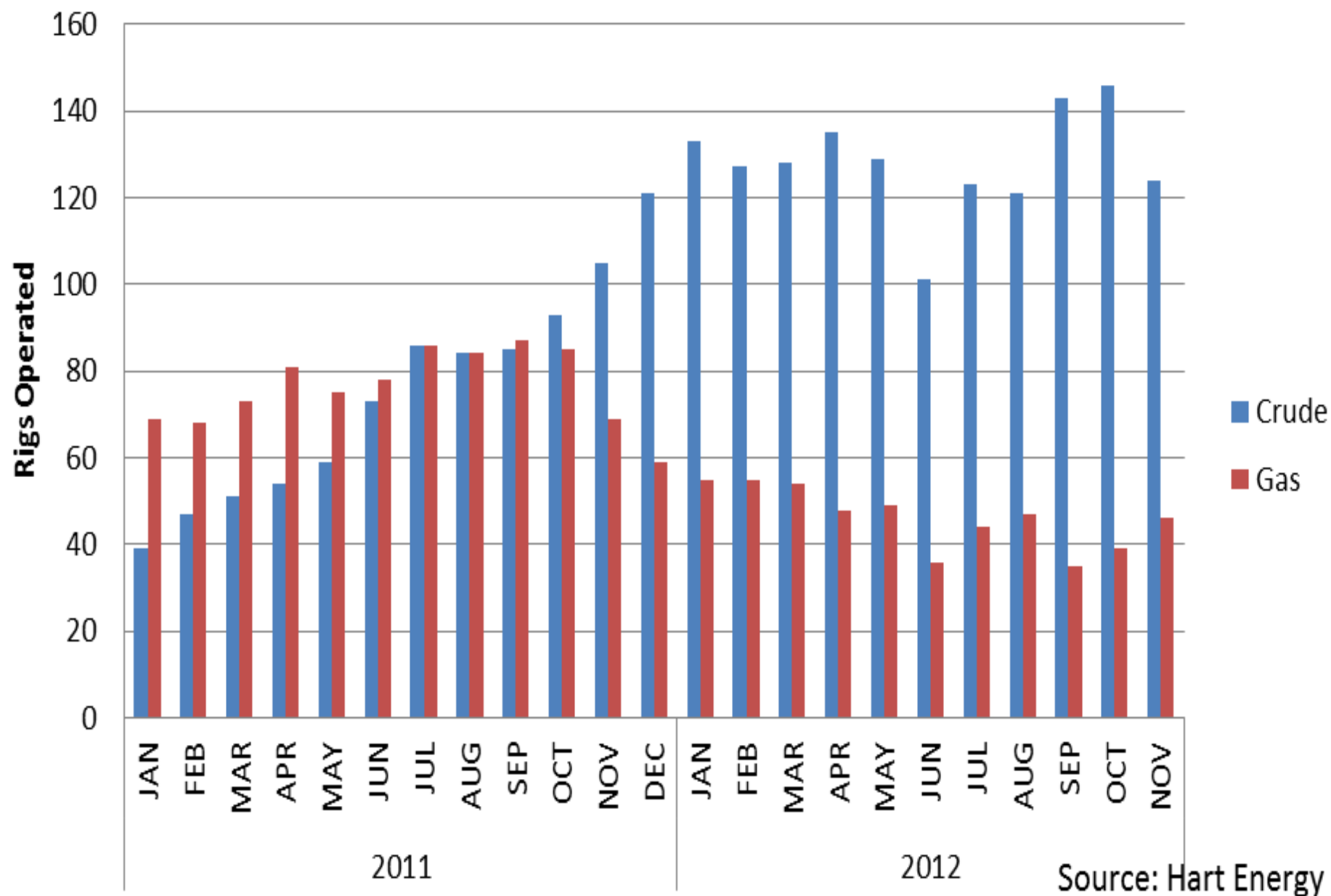
# Rotary drilling rig count in the U.S.

Total U.S.	Gas Rigs	Oil Rigs
January 2008	1450	316
March 2013	431	1341

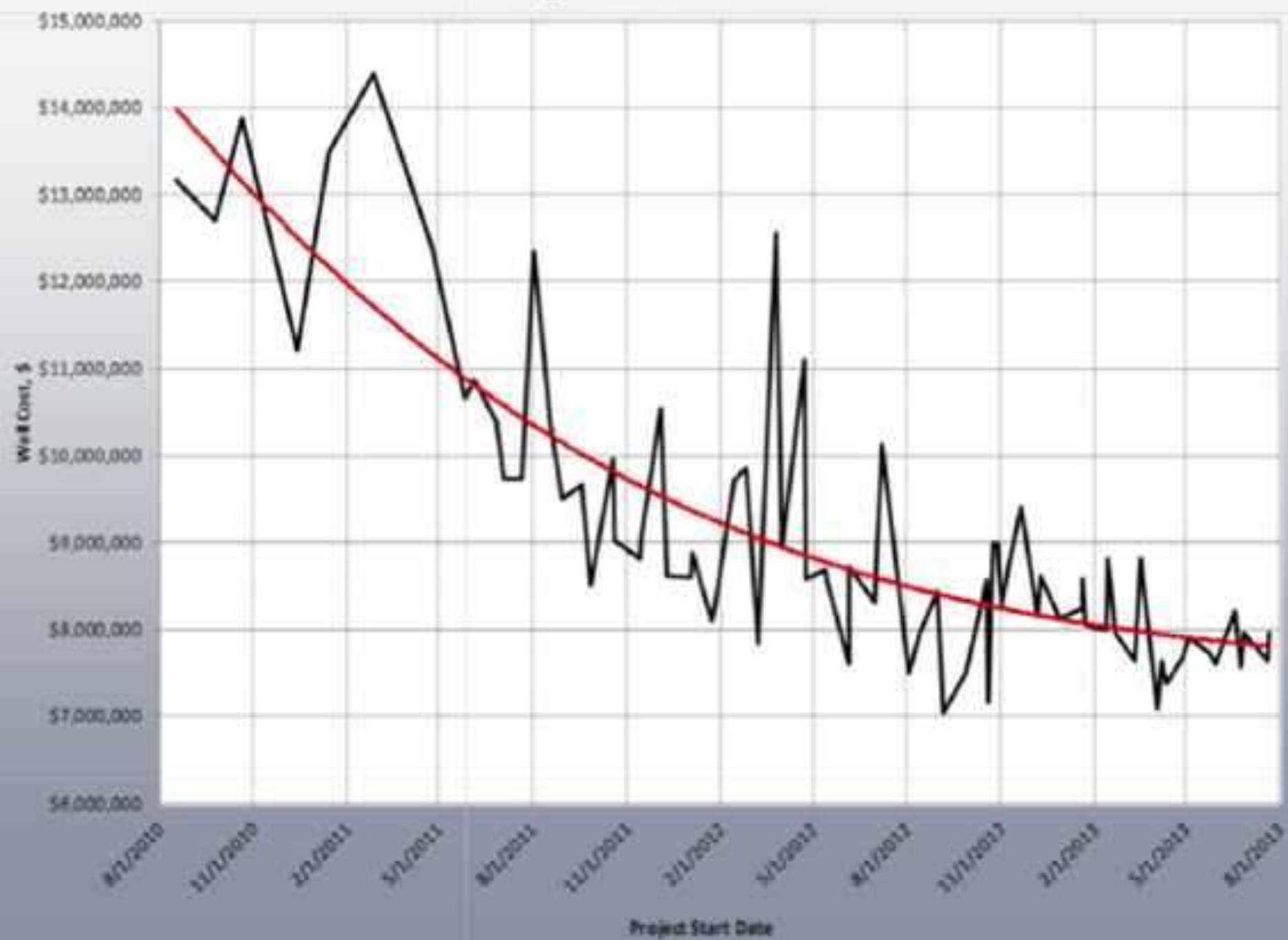


Source: Baker Hughes

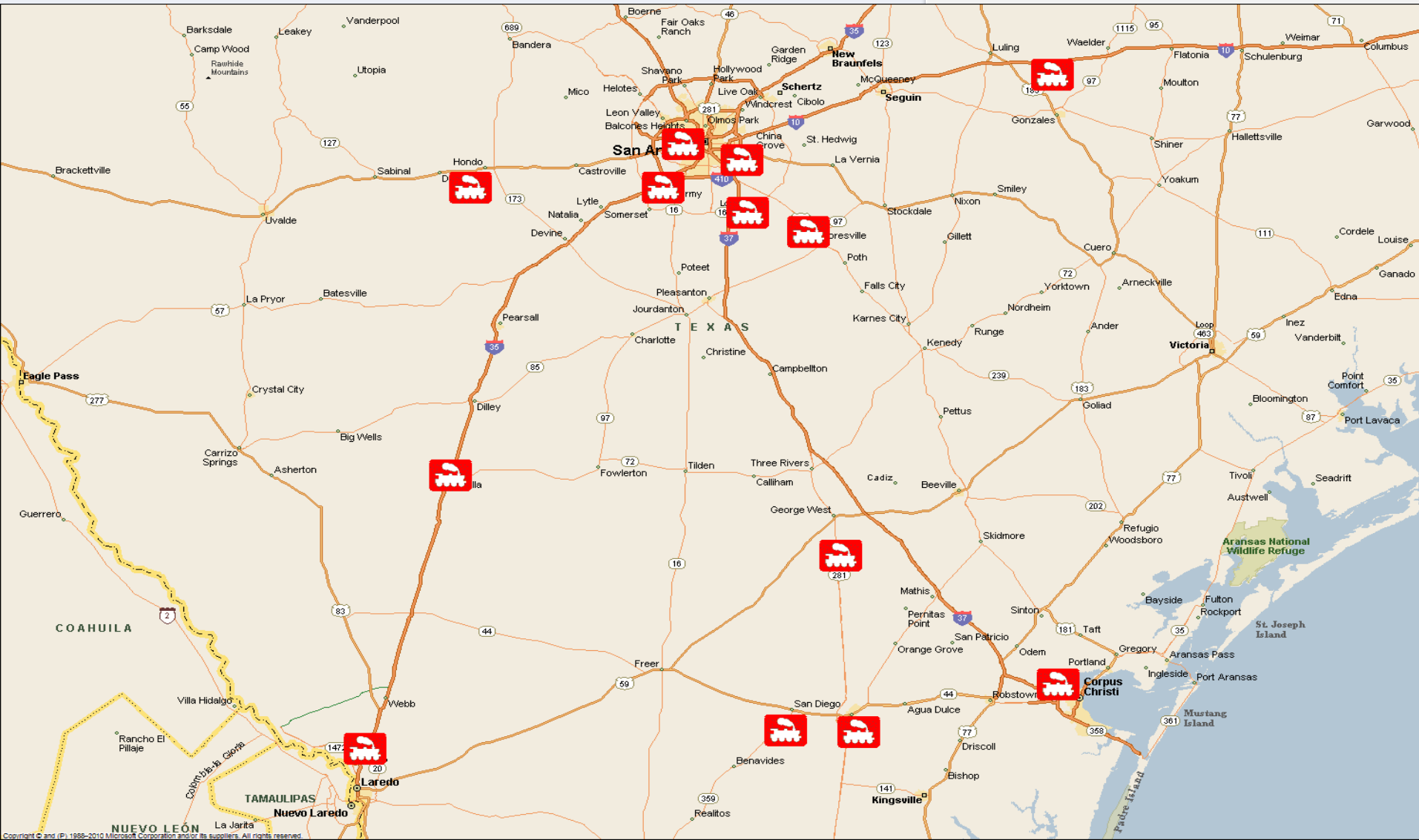
# Eagle Ford Rig Count



# Eagle Ford Well Costs



**Rail can move one ton 500 miles on one gallon of fuel**

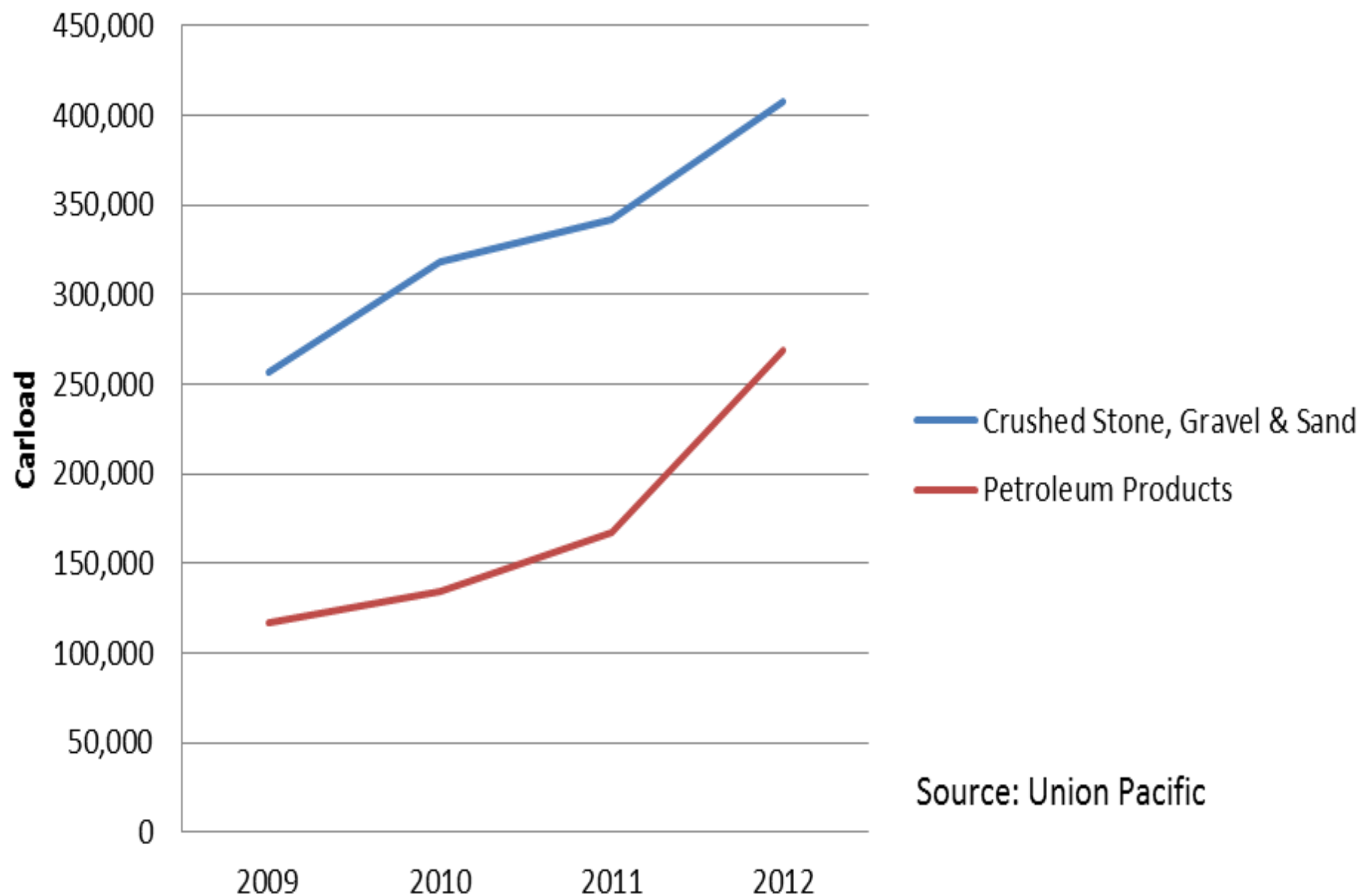




# Gardendale Rail Spur near Cotulla



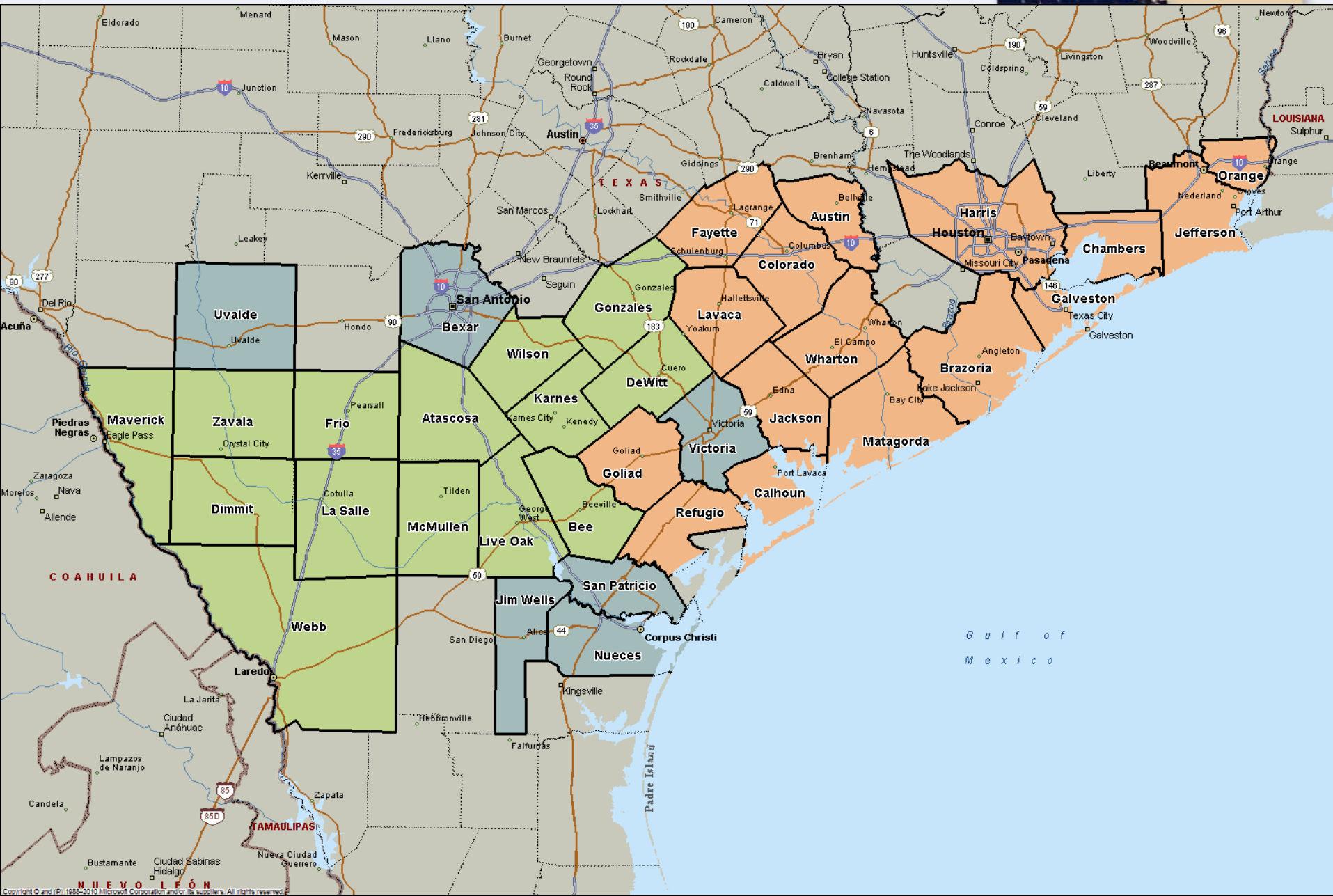
# Union Pacific - Yearly Carload





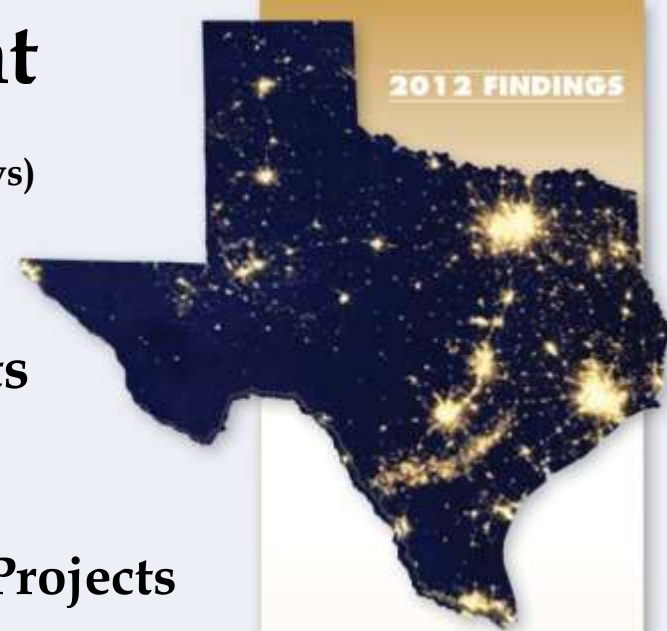


## 2012 FINDINGS

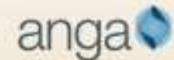


# Billion of Dollars of Investment Driven by Eagle Ford (and other Shale Plays)

- Nearly \$100 Billion in Planned Investments Along the Gulf Coast
  - Crude Oil, Natural Gas and NGL Pipeline Projects (Gathering and Transmission)
  - Natural Gas Processing Plants
  - Fractional Capacity Projects
  - Ethane, Propane and Related Projects
  - Rubber, Fertilizer and Export Projects
  - Crude/Condensate Terminal/Storage Projects



2012 FINDINGS



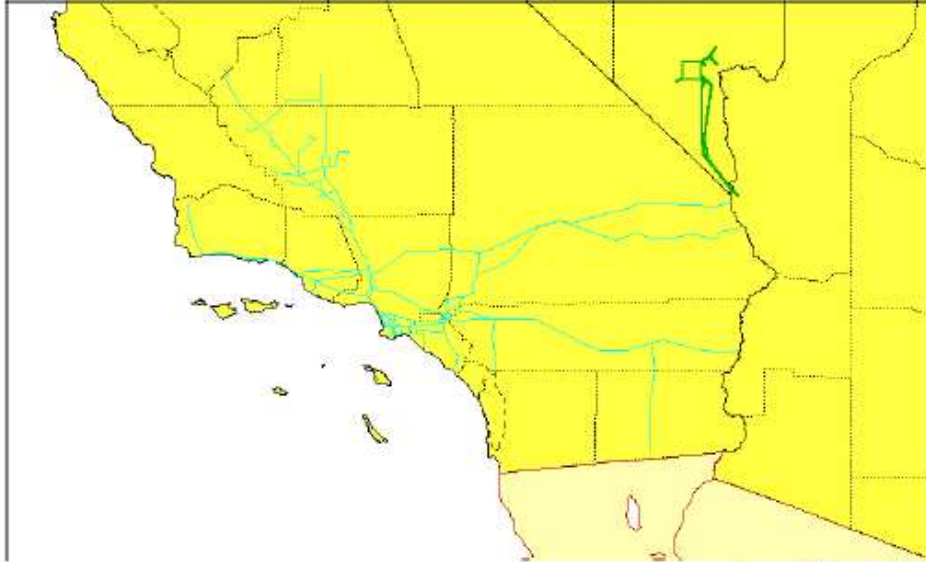


# Anadarko Construction on a Natural Gas Processing Plant in La Salle County

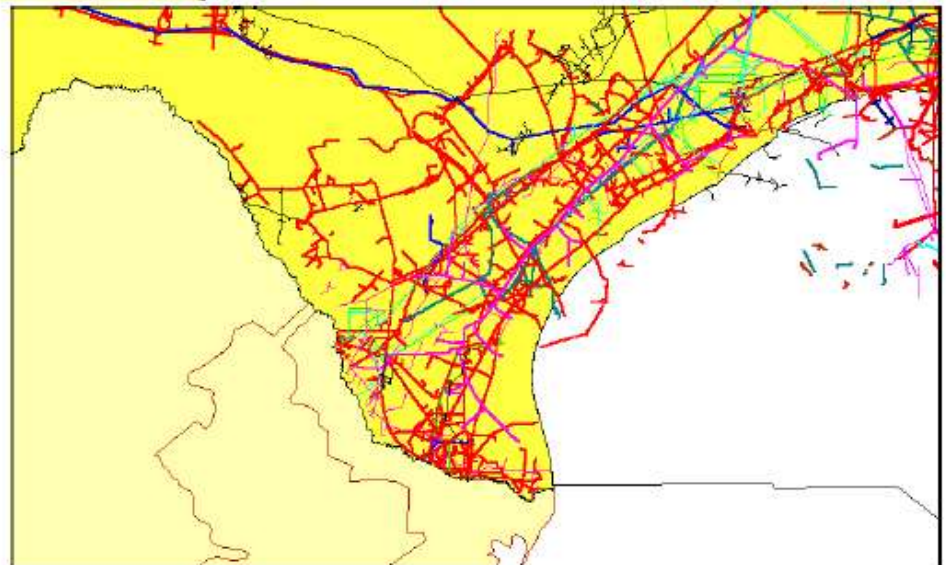


# Pipeline Infrastructure in California

Southern California



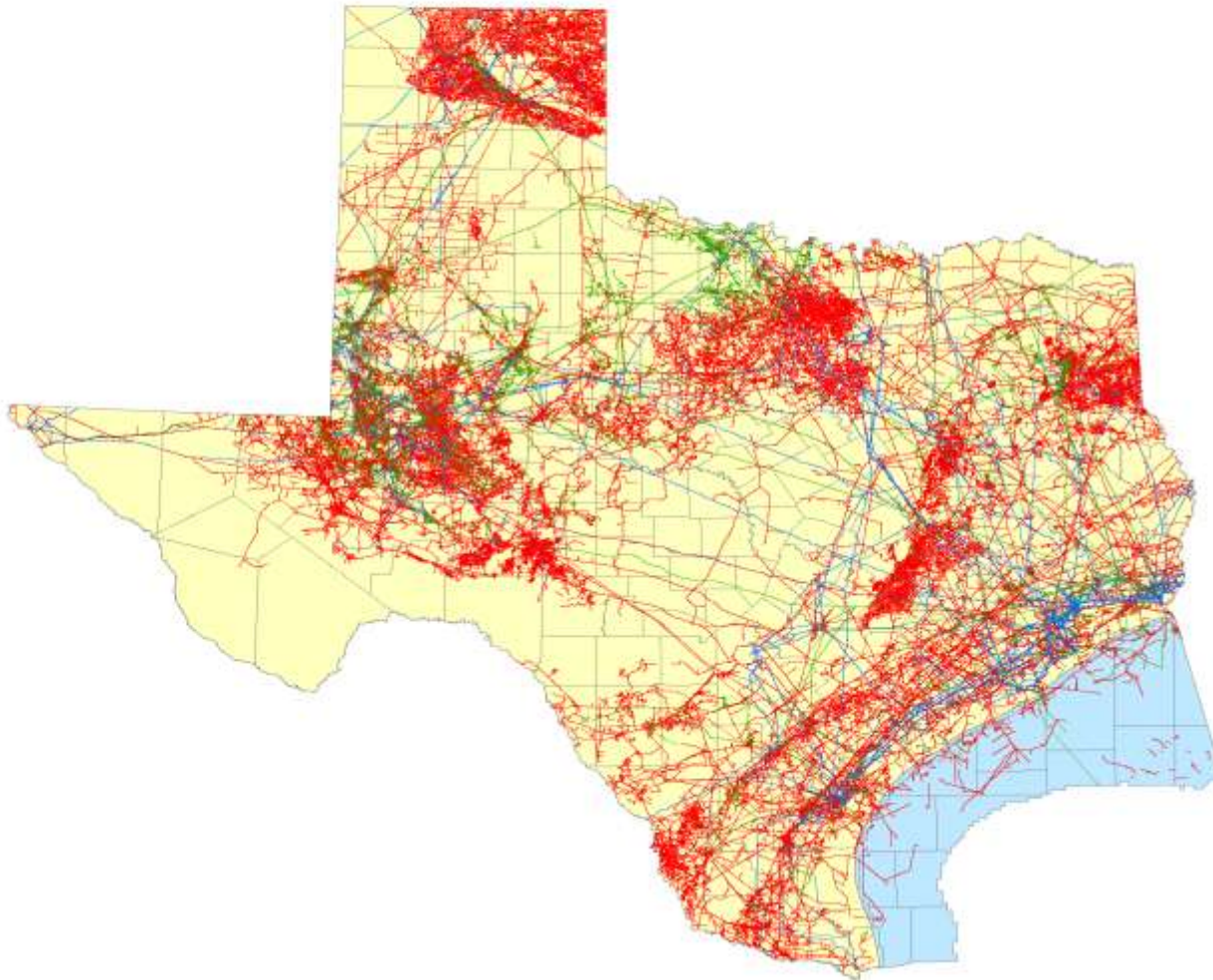
South Texas



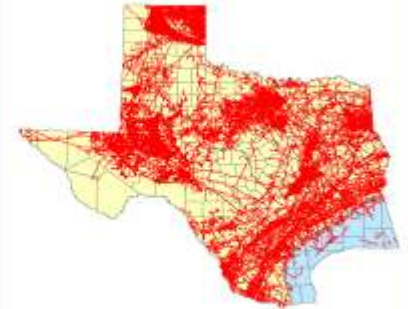


# Pipelines in Texas

2012 FINDINGS



Natural Gas, Crude, and Hazardous Liquids Pipelines



Natural Gas Pipelines



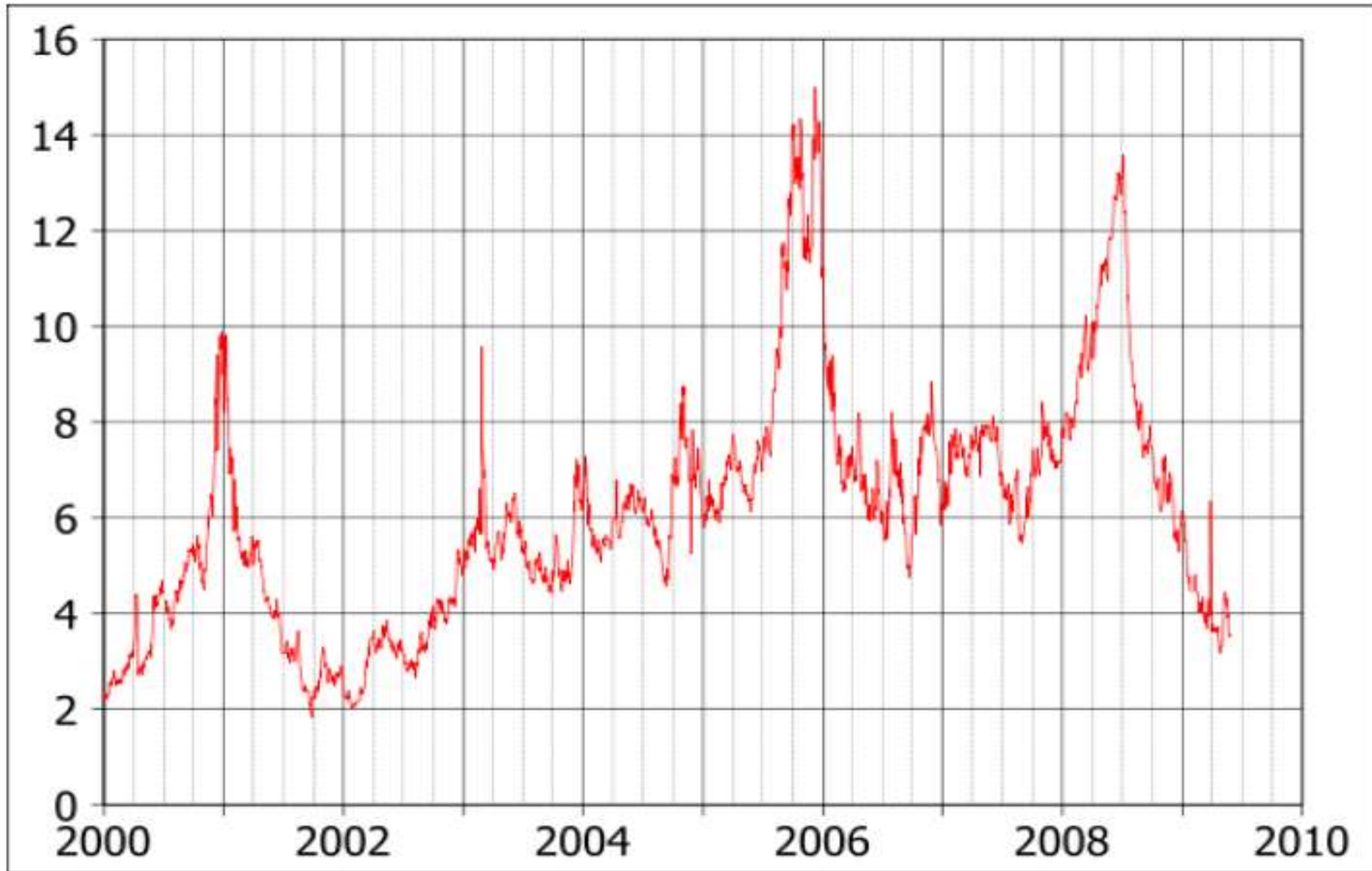
Crude Pipelines



Hazardous Liquids Pipelines

# Natural Gas Spot Prices

(Henry Hub)



## NATURAL GAS



SOURCE: REUTERS

CNBC



# Factors That Are Driving Natural Gas Demand

- Input to Electric Generation Power Plants
- Feedstock for Manufacturers Facilities
  - (Chemicals, Plastics, Fertilizers, Steel, etc.)
- Conversion of Local Fleets to CNG Vehicles
- Possible LNG Export



# Why Do We Have a Global Oil Market?

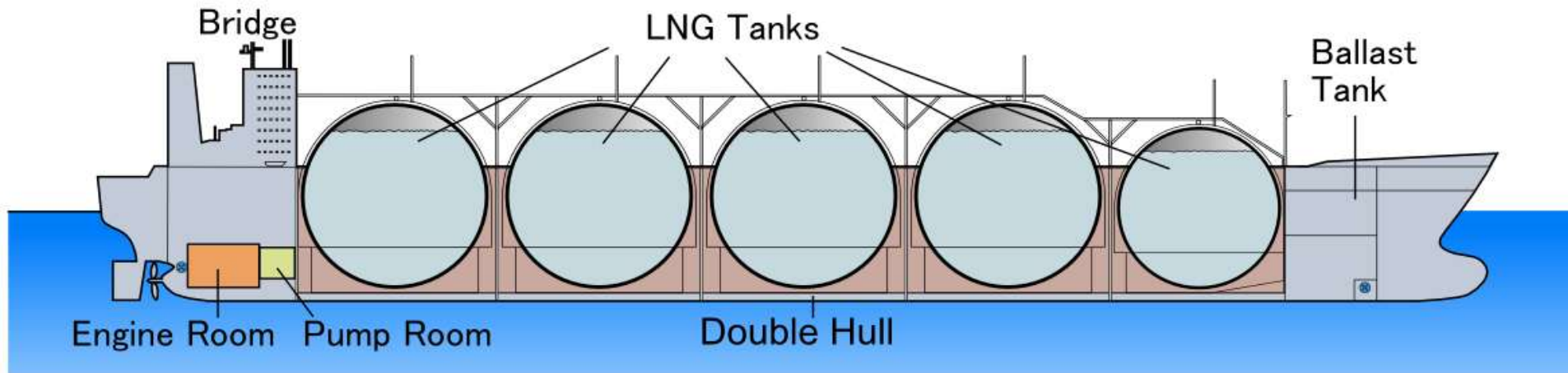
Even largest ships visit docks...

Knock Nevis  
Most known vessel in the world

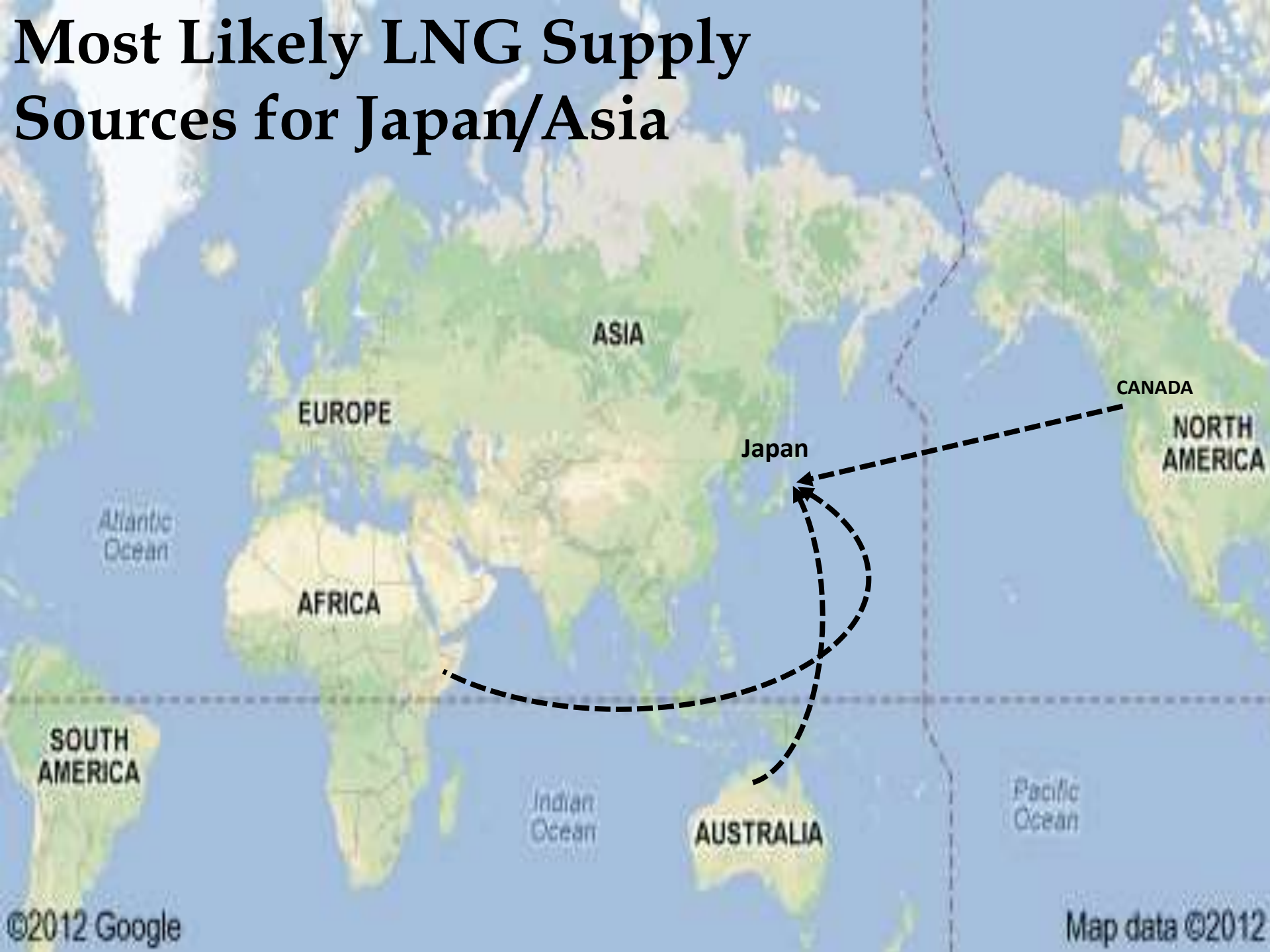




## LNG tanker (side view)



# Most Likely LNG Supply Sources for Japan/Asia



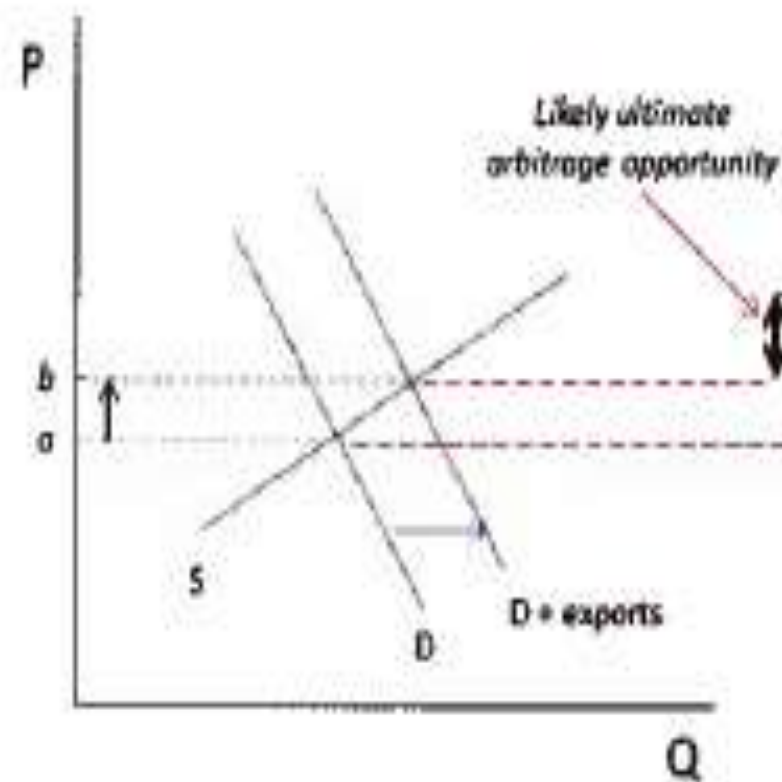
# LNG Export

- Studies to-date estimate net benefit to US economy
- Supply will react to demand across markets
- Analysis suggests long-term range between \$4-7 per mcf (and possibly \$5-6 mcf)

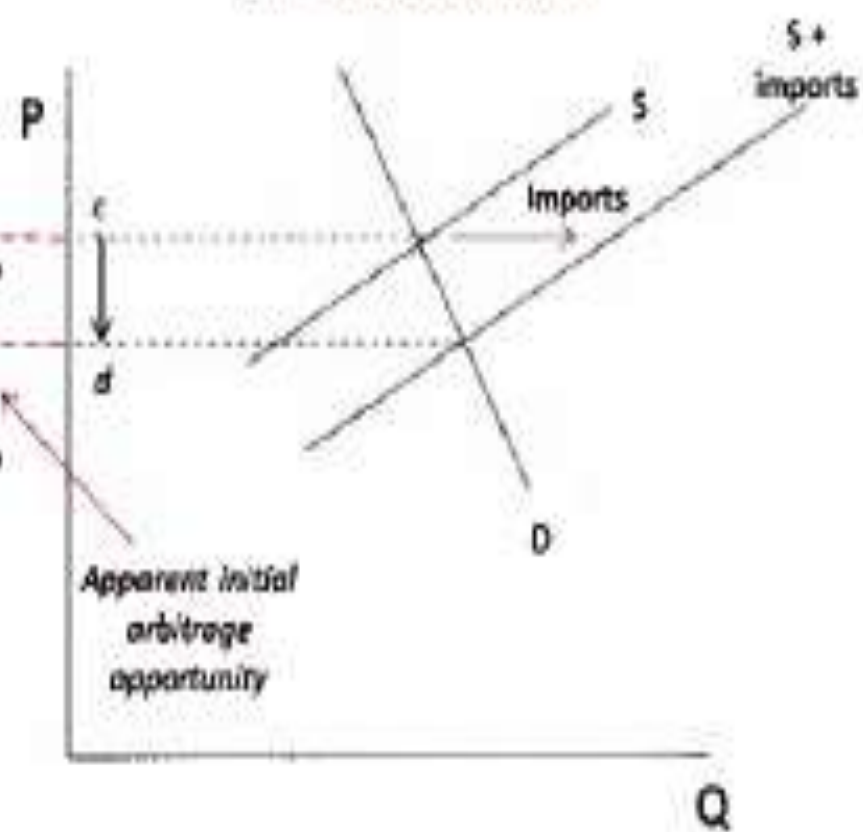




### 1. Domestic Market



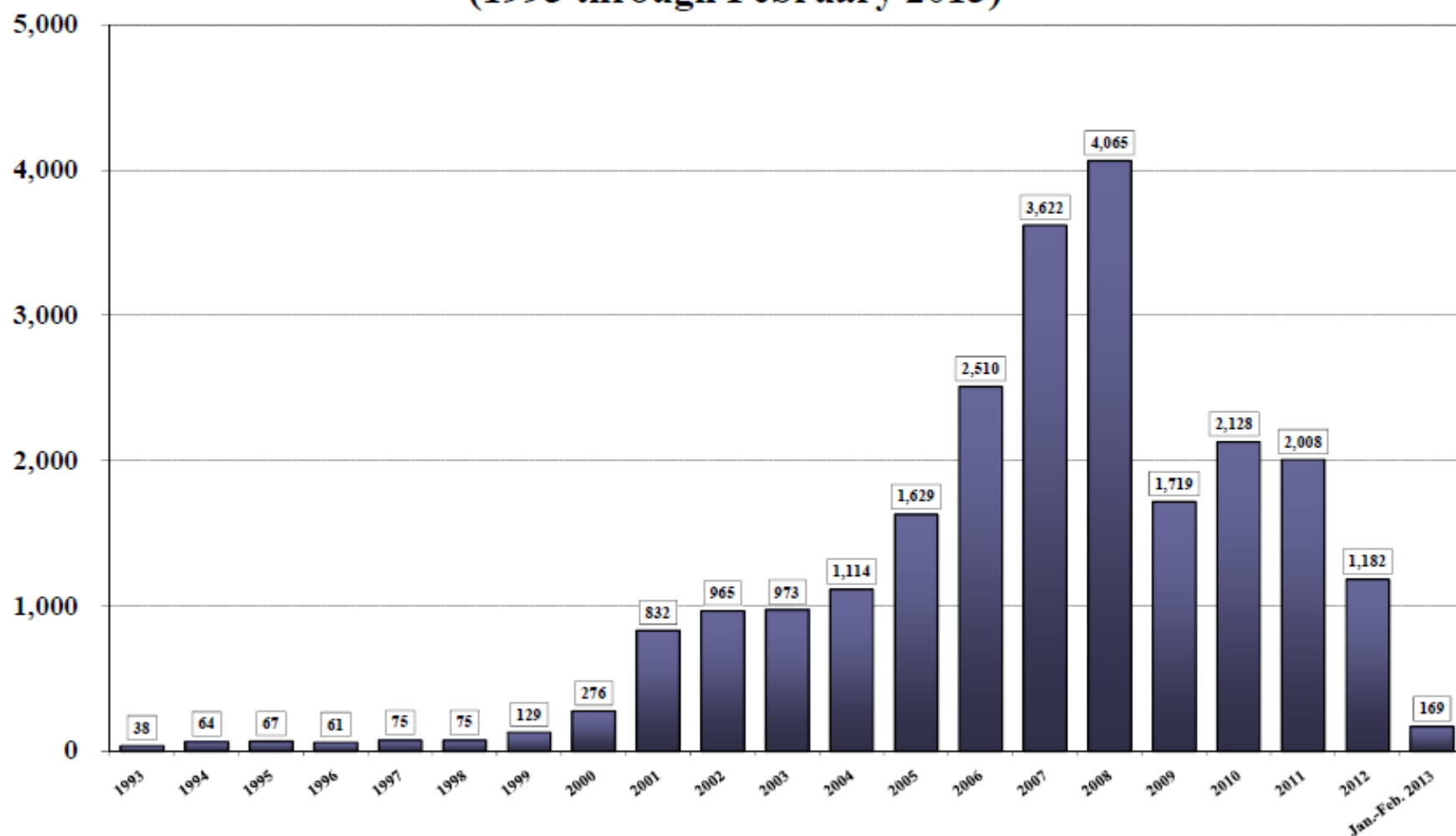
### 2. Foreign Market



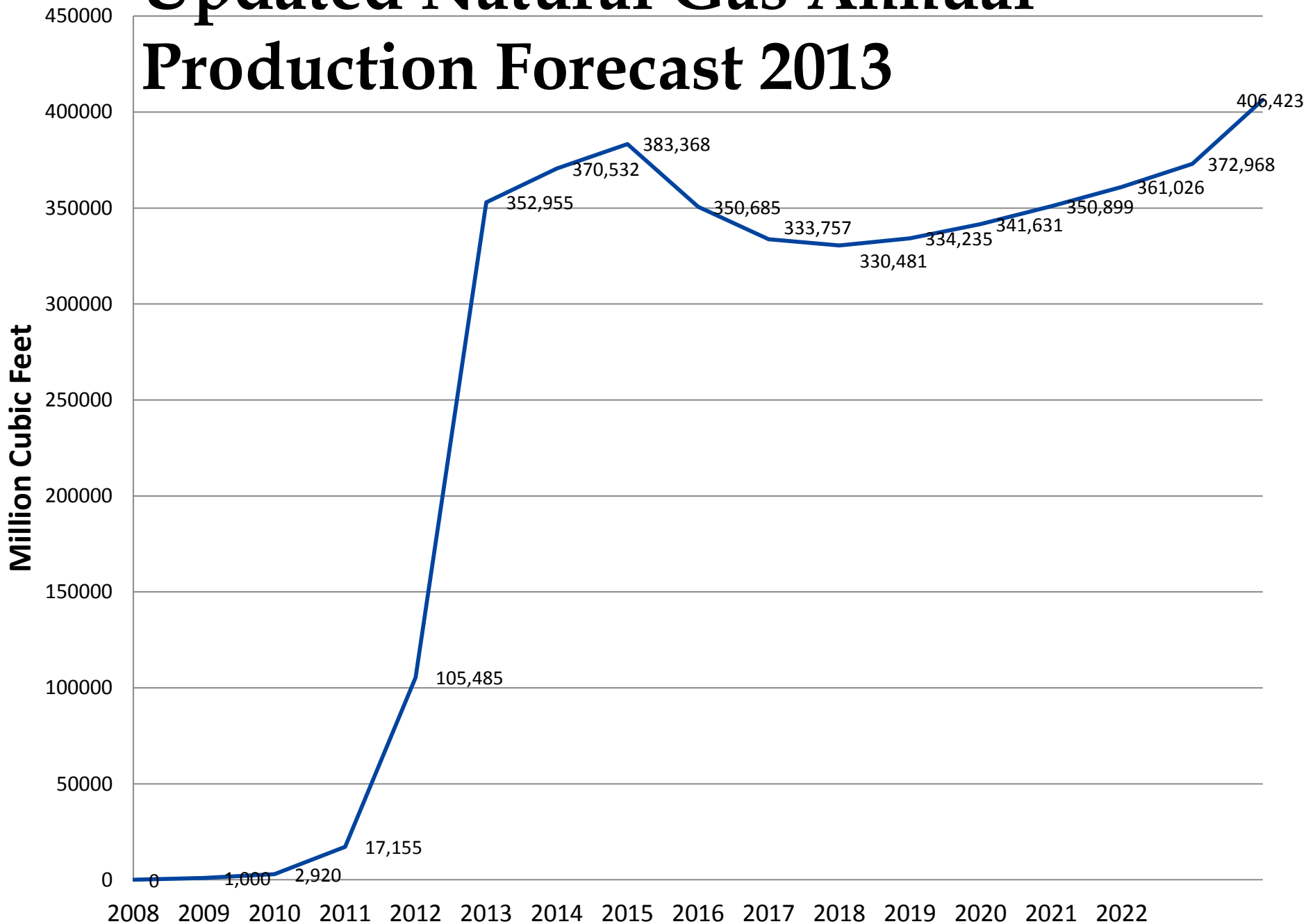
Source: Adapted from Samuelson (1976) and Medlock (2012)

NB: In the graphs above  $P$  = Price,  $Q$  = Quantity,  $D$  = Demand,  $S$  = Supply and  $a$ ,  $b$ ,  $c$  and  $d$  represent various price levels

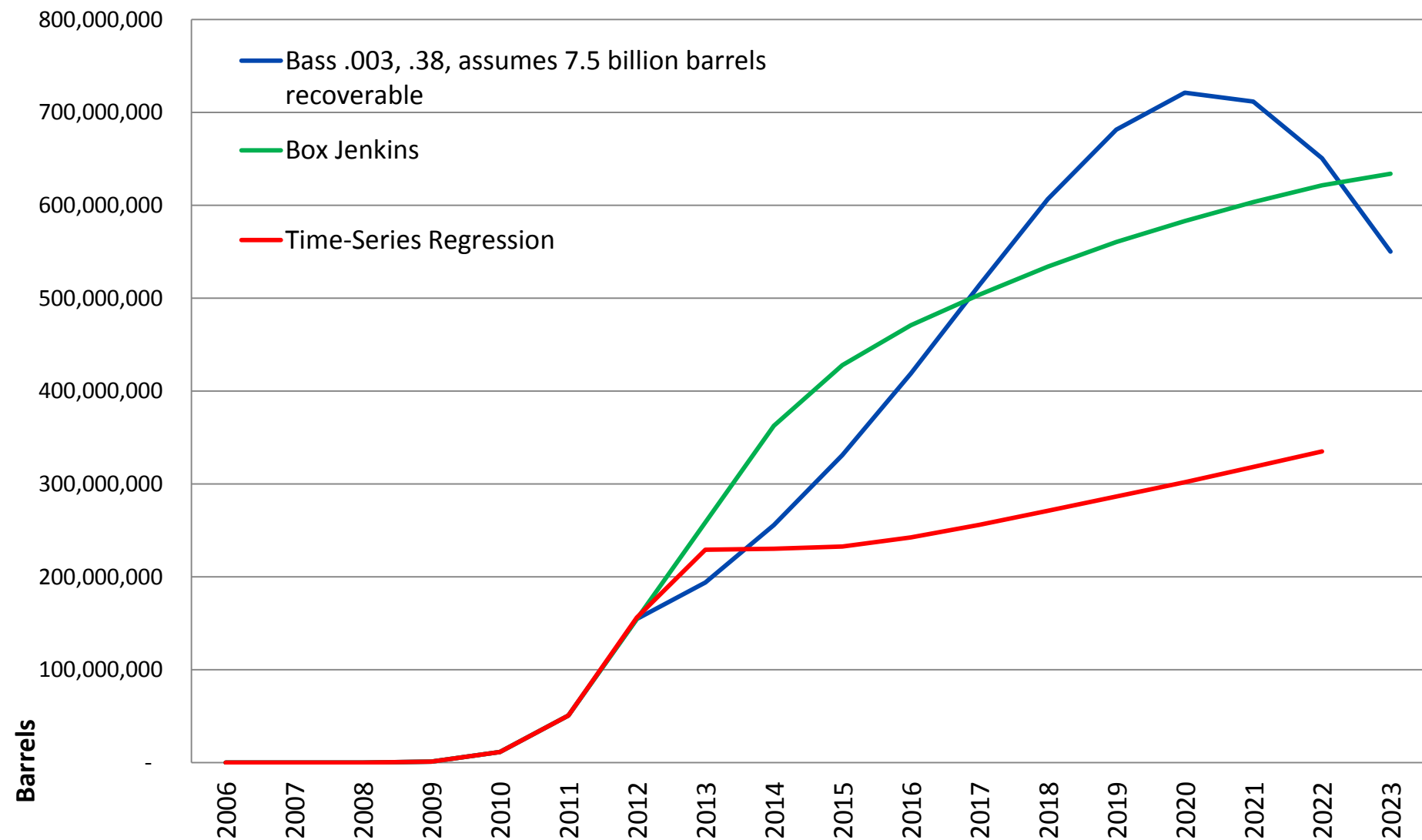
# Newark, East (Barnett Shale) Drilling Permits Issued (1993 through February 2013)



# Updated Natural Gas Annual Production Forecast 2013



# Updated Eagle Ford Shale Oil/Condensate Annual Production Forecast (bbls) Scenarios

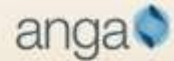


# Educational Institutions Ramping Up to Meet Eagle Ford Workforce Needs

- **Alamo Community Colleges**
  - EFS Boot Camp, OSHA, CDL, Landman
- **Coastal Bend College**
  - Petroleum Industries Training Program, AAS in Oil and Gas Technology, Petroleum Regulation and Instrumentation, Oil Patch Prep
- **Laredo Community College**
  - Technical Training Program for Oil and Gas, Accelerate Texas Adult Based Education Innovation Grant
- **Southwest Texas Junior College and Victoria College**
  - Welders, Truck Drivers, Vocational Nurses
- **Texas A&M International University**
  - Petroleum Engineering Degree, Oil and Gas Accounting Certificate Program
- **Texas A&M University – Kingsville**
  - Mechanical and Civil Engineering Programs, Fundamentals of Reservoir Engineering
- **The University of Texas at San Antonio**
  - Municipal Capacity Workshops, RBP Contracting Resource Center, EFS Community Development Program, Economic Impact, Strategic Housing Analysis, Oil and Gas Certificate Program, Healthcare Baseline Study



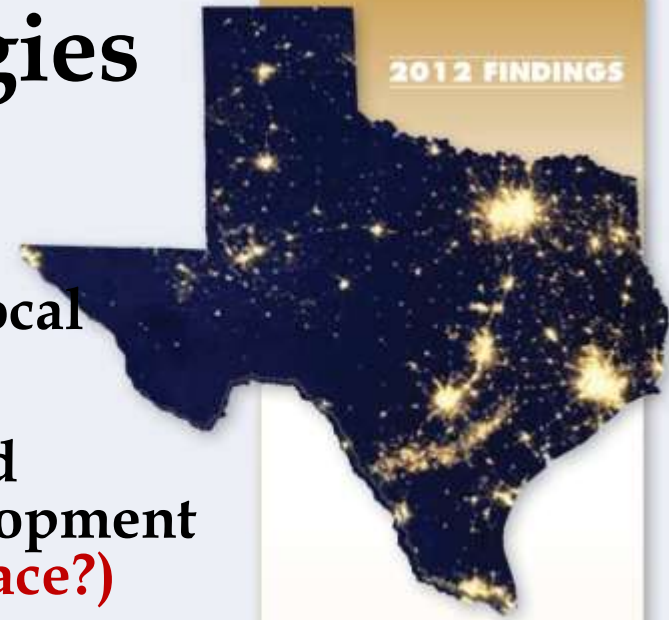
2012 FINDINGS



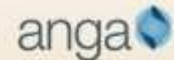


# Medium-Long Term Strategies for Success

- Look for **Opportunities to Diversify** the Local Economy (**Destination Locations**)
- **Rediscover Your Community's History** and Architecture as a Tool for Economic Development (**Why was the City Founded in the First Place?**)
- Seize the Opportunity to Implement **Form-Based Zoning That Emphasizes Mixed-Use**, Flexibility, Livability and Sustainability
- **Forge Linkages, Alliances** and Engage Other EFS Communities, Higher Education Institutions
- Identify **Best Practices** from Other Shale Plays
- **Work with Elected Representatives** at the Municipal, County, State and National Levels on Infrastructure Planning



2012 FINDINGS



# Looking Beyond Eagle Ford:

## Examples of Sustainable Infrastructure

(Key to Attracting New Residents, Visitors and Industry)

- Better Roadways
- Improved Medical Facilities
- More Housing Options
- Adequate Water and Power Supply, Improved Waste Management
- Better Quality K-12 and Vocational Education
- Improved Aesthetics, Elimination of Blight, Land Recycling (Bulldozing Derelict Houses, Cleaning Up Junkyards; Renovation and/or Repurposing of Historical Buildings)
- Branding: Identity, Gateways
- Livability: Public Amenities that Improve the Desirability of the Community and Quality of Life (Lakes, Parks, Hike/Bike Trails, Walk-able Neighborhoods)

Why would someone want to live in or visit your community?



2012 FINDINGS

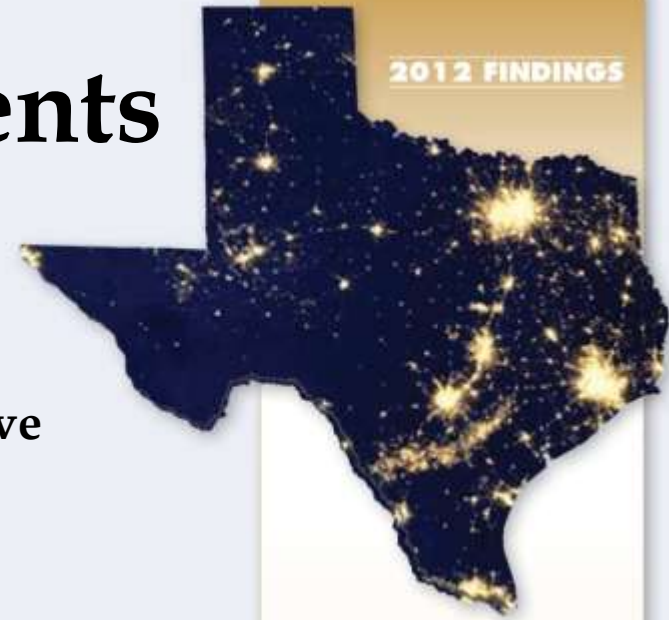


Institute for Economic Development  
University of Texas at San Antonio

UTSA

# Quality of Life Components

2012 FINDINGS



- Social relationships and culture
- Public safety and crime rates
- Independence and personal autonomy
- Healthcare services
- Water and air quality
- Solid waste and wastewater treatment
- Electricity
- Telecommunication infrastructure
- Employment opportunities
- Housing options
- Schools and education
- Banking services
- Ease of travel
- Animal and destructive insect control
- Public transport
- Variety of restaurants
- Cultural events
- Sports and leisure activities
- Retail variety
- Religious options
- Climate
- Recreation
- Aesthetics
- Physical activity

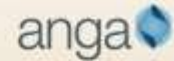
# Public Amenity Menu

(Ongoing Maintenance Will Be Required)

- Information Centers
- Museums
- Activity Centers
- Recreational Facilities
- Town Halls
- Open Spaces / Greenscapes
- Church Yards
- Public Playgrounds (including adult)
- Sport Field and Facilities
- Libraries
- Public Rights-of-Way / Footpaths
- Nature Reserves / State Parks
- Public Parks
- Country Parks
- Fountains / Reflecting Pools
- Cafes / Sitting Areas
- Town Squares
- Fishing Areas
- Mowing and Landscaping
- Flowers and Trees
- Litter Removal
- Bike Paths
- Lakes / Waterfronts
- Wide Sidewalks
- Outdoor Gathering Places
- Scenic Views
- Public Open Spaces
- Escalators
- Public Bathrooms
- Colleges and Universities
- Hospitals / Clinics
- Public Velodromes / Skate Parks
- Bridle Ways / Stables
- Community Centers
- Amphitheatres
- Dance Halls



2012 FINDINGS











































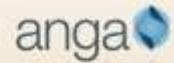
Gateway  
Example

# Thank you!

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2012 FINDINGS



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Research Director  
UTSA Institute for Economic Development  
thomas.tunstall@utsa.edu